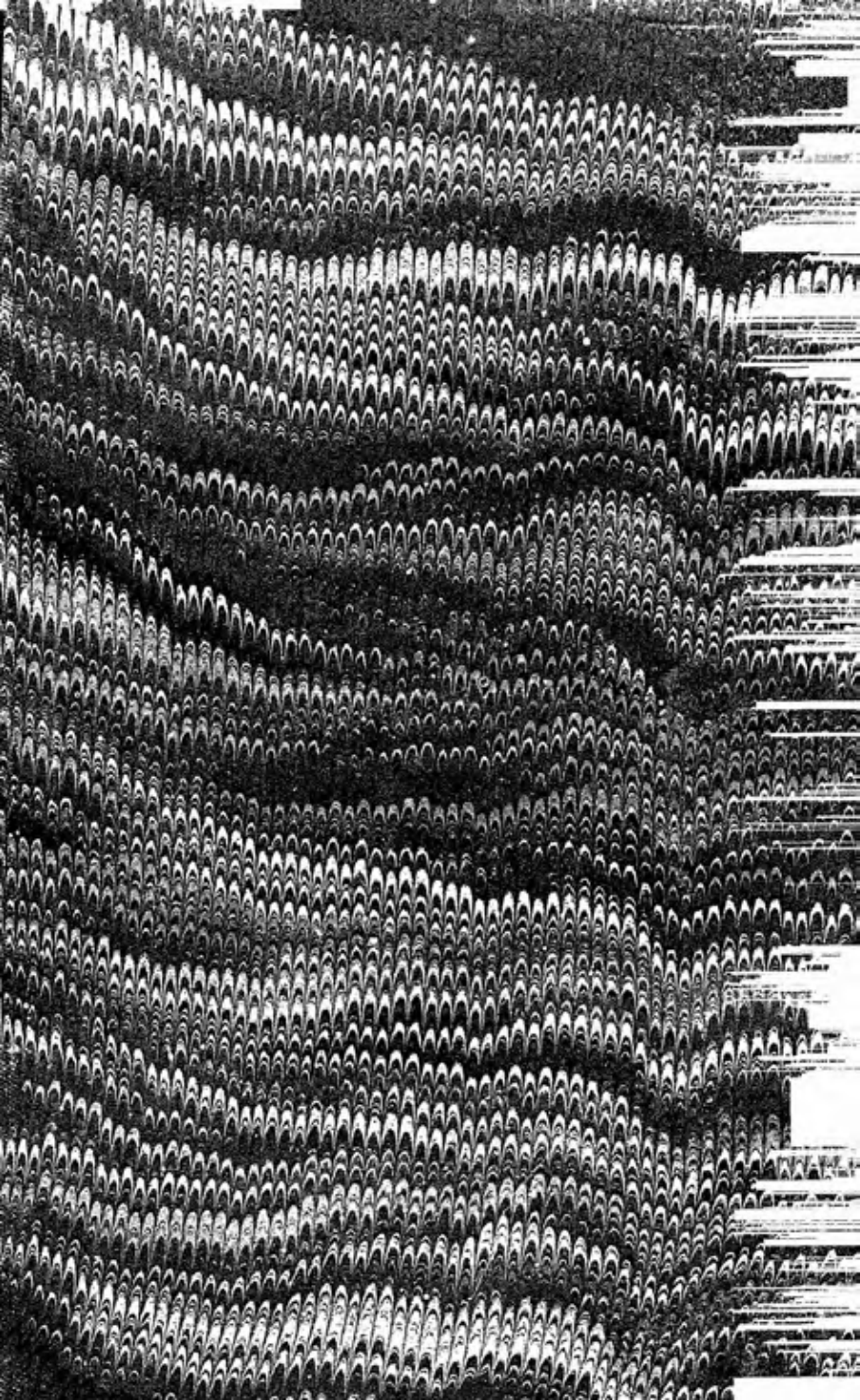


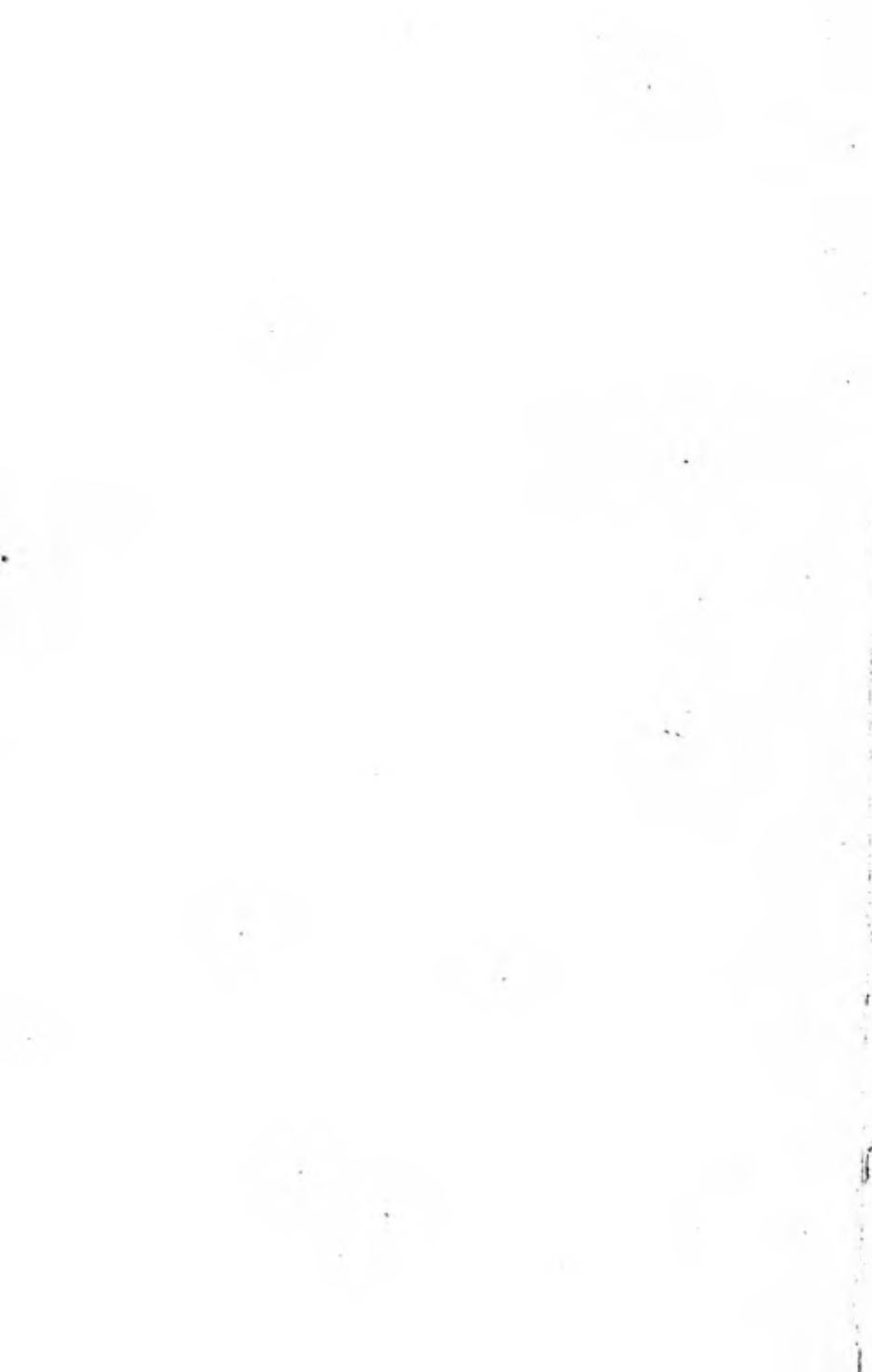
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CORRIGENDA.

Page 66 foot note for *Heteropodous* read *Heteropodous*.

„ „ for *Macgillioragiulæ* read *Macgillivrayiidae*.

„ „ for *Simesigera Dbil* read *Sinusigera*. *D' Orb.*



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Plate No. V., issued in *September*, for p. 218.

ERRATA.

Page 66, foot note for *Hetewopodous* read *Heteropodous*.

„ „ for *Macgillioragüda* read *Macgillivrayiida*.

„ „ for *Simesigera Dbil* read *Sinusigera*. *D'Orb.*

„ 126, line 25, read *E. Buck*, for *E. Busk*.

„ 203, line 4 from below, read *Pultusk*, for *Pultush*.

„ —, line 10 from below, read *cord*, for *end*.

LIST OF MEMBERS
OF THE
ASIATIC SOCIETY OF BENGAL,
ON THE 31ST DECEMBER, 1867.

LIST OF ORDINARY MEMBERS.

The * distinguishes Non-Subscribing and the † Non-Resident Members.

| Date of Election. | | | |
|-------------------|----------|---|------------|
| 1847 | June 2. | *Abbott, Major-Genl. J., Royal Artillery. | Europe |
| 1860 | Dec. 5. | Abdool Lutceef, KhanBahadur, Maulavi. | Calcutta |
| 1865 | June 7. | Agabeg. J. Esq. | Calcutta |
| 1860 | July 4. | †Ahmad Khan. Saiëd, Bahadur. | Allyghur |
| 1862 | April 2. | †Aitchison, C. U. Esq. C. S. | Lahore |
| 1862 | April 4. | *Aitchison, J. E. T. Esq. M. D. | Europe |
| 1859 | Feb. 2. | *Alabaster, C. Esq. | China |
| 1866 | Jan. 17. | †Allen, Major A. S. | Lucknow |
| 1852 | July 7. | *Allen, C. Esq., B. C. S. | Europe |
| 1864 | May 4. | †Alexander, N. S. Esq., C. S. | Purneah |
| 1867 | Aug. 7. | †Amery, C. F. Esq. | Lahore |
| 1860 | Oct. 3. | Amir Ali Khan, Múnshi. | Calcutta |
| 1861 | May 1. | Anderson, Dr. T., F. L. S. | Calcutta |
| 1865 | Jan. 11. | †Anderson, Dr. J., F. L. S. | Birmah |
| 1843 | Sept. 4. | †Anderson, Lieut.-Col. W., Bengal Artillery. | Lahore |
| 1866 | July 4. | †Anderson, A. Esq. | Fyzabad |
| 1864 | Dec. 7. | *Anderson, W. Esq. | Europe |
| 1860 | Nov. 7. | †Anley, W. A. D., Esq. | Sarun |
| 1867 | Jan. 16. | Anley, G. A. D. Esq. | Calcutta |
| 1861 | Sept. 4. | Asghur Ali Khan Bahadur, Nawab. | Calcutta |
| 1861 | July 3. | *Asphar, J. J. T. H. Esq. | Europe |
| 1864 | Dec. 7. | †Atkinson, E. F. T. Esq. | Jaunpore |
| 1855 | July 4. | Atkinson, W. S. Esq., M. A., F. L. S. | Calcutta |
| 1861 | Feb. 6. | †Austen, Capt. H. H. G., H. M.'s 24th Foot, Surv. Genl.'s Dept. | Chirapunji |
| 1826 | Sept. 6. | Avdall, J. Esq. | Calcutta |

| Date of Election. | | | |
|-------------------|--|--------------|--|
| 1835 Oct. 7. | *Baker, Col. W. E., Bengal Engineers. | Europe | |
| 1865 Nov. 1. | Ball, V. Esq. Geol. Survey. | Calcutta | |
| 1860 Nov. 7. | Banerjea, The Rev. K. M. | Calcutta | |
| 1864 May 4. | Barry, Dr. J. B. | Calcutta | |
| 1866 Jan. 17. | Barton, The Rev. J. | Calcutta | |
| 1862 Aug. 6. | †Basevi, Capt. J. P., Royal Engineers. | Chicculdah | |
| | | Elichpore | |
| 1860 July 4. | *Batten, G. H. M. Esq., B. C. S. | Europe | |
| 1838 Jan. 3. | *Batten, J. H. Esq., B. C. S. | Europe | |
| 1859 May 4. | Bayley, E. O. Esq., B. C. S. | Calcutta | |
| 1861 Feb. 6. | *Bayley, S. O. Esq., B. C. S. | Calcutta | |
| 1849 June 6. | *Beadon, The Hon'ble Sir Cecil, B. C. S. | Europe | |
| | | Balasore | |
| 1864 Sept. 7. | †Beames, J. Esq., B. C. S. | Calcutta | |
| 1841 April 7. | Beaufort, F. L. Esq., B. C. S. | | |
| 1861 Sept. 4. | *Beavan, Lieut. R. C., late 62nd B. N. I. | Abyssinia | |
| 1847 Aug. 4. | Beckwith, J. Esq., | Alipore | |
| 1867 July 3. | †Belletty, N. A. Esq., Civil Assistant Surg. | Shillong | |
| | | Khasia Hills | |
| 1830 Sept. 1. | *Benson, Lieut.-Col. R. | Europe | |
| 1862 Dec. 3. | †Bernard, C. E. Esq., B. C. S. | Nagpore | |
| 1862 Aug. 6. | Beverley, H. Esq., C. S. | Calcutta | |
| 1862 June 4. | †Bhan Daji, Dr. | Bombay | |
| 1862 July 2. | Bholanath Mullick, Bābu. | Calcutta | |
| 1864 Nov. 2. | Bhoodeb Mookerjee, Bābu. | Chinsurah | |
| 1840 July 15. | *Birch, Major-General Sir R. J. H., K. C. B. | Europe | |
| 1846 Mar. 4. | *Blagrove, Major T. C., 26th Regt., B. N. I. | Europe | |
| | | Calcutta | |
| 1859 Sept. 7. | Blane, Lieut.-Col. S. J. | | |
| 1857 Mar. 4. | Blanford, H. F. Esq., A. R. S. M., F. G. S. | Calcutta | |
| 1859 Aug. 3. | *Blanford, W. T. Esq., A. R. S. M., F. G. S. Geol. Surv. | Abyssinia | |
| 1864 April 6. | Blochmann, H. Esq., M. A. | Calcutta | |
| 1857 Aug. 2. | *Bogle, Lieut.-Col. Sir A., Kt. | Europe | |
| 1859 Aug. 3. | Bolie, Chand Singh, Bābu. | Calcutta | |
| 1866 June 6. | Bourke, W. M. Esq. | Calcutta | |
| 1867 May 1. | †Bonavia, M. M. Esq., M. D. Asst. Surg. | Lucknow | |
| 1859 Oct. 12. | †Bowring, L. B. Esq., B. C. S. | Bangalore | |
| 1854 Nov. 1. | *Boycott, Dr. T., B. M. S. | Europe | |
| 1865 May 3. | †Bradford, C. W. V. Esq. | Hoogly | |
| 1860 Mar. 7. | Brandis, Dr. D. | Calcutta | |
| 1860 Oct. 3. | Brandreth, Hon'ble J. E. L. | Calcutta | |

| Date of Discharge. | | |
|--------------------|---|------------------------|
| 1864 Dec. 7. | Branson, J. H. A. Esq. | Calcutta |
| 1862 Jan. 15. | *Briggs, Lieut.-Col. D. | Europe |
| 1866 April. 4. | †Broderrick, H. C. Esq., M. D. | Angur |
| 1847 June 2. | *Brodie, Capt. T., 5th Regt., B. N. I. | Europe |
| 1867 Feb. 6. | Brooke, Col. J. C. | Barrackpore |
| 1866 Jan. 17. | †Brown, Lieut.-Col. D. | Amherst |
| 1860 Nov. 7. | †Browne, Capt. Horace. A. | Moulmein |
| 1866 June 6. | †Brownfield, C. Esq. | Gowhatty |
| 1866 June 6. | Buckle, Dr. H. B., C. B. | Calcutta |
| 1856 Sept. 3. | Busheerooddin, Sultan Mohammad. | Chinsurah |
| 1867 Sept. 4. | †Butler, Lieut. J. | Assam |
| | | |
| 1867 June 5. | Calcutta, Right Rev., Lord Bishop. | Calcutta |
| 1860 June 6. | †Campbell, C. J. Esq., C. E. | Kamptee |
| 1859 Sept. 7. | *Campbell, Dr. A. | Europe |
| 1863 June 3. | †Campbell, Hon'ble G. | Nagpore |
| 1860 Jan. 3. | †Carnac, H. Rivett, Esq., B. C. S. | Nagpore |
| 1865 Nov. 1. | †Carnegy, P. Esq. | Fyzabad |
| 1867 Dec. 4. | Chambers, F. J. Esq. | Calcutta |
| 1860 Oct. 3. | †Christian, J. Esq. | Monghyr |
| 1867 Dec. 4. | †Chisholm, J. W. Esq. | Belaspore |
| 1863 Aug. 5. | †Chunder Nath Roy, Cowar. | Natore |
| 1863 April 1. | Cleghorn, Dr. H. | Calcutta |
| 1864 May 4. | †Cline, Dr. G. W., F. G. S., LL. D. | Nagpore |
| 1861 Sept. 4. | †Cockburn, J. F. Esq., C. E. | Kurhurbari Colliery |
| | | |
| 1862 April 2. | Colles, J. A. P. Esq., M. D. | Calcutta |
| 1851 Mar. 5. | *Colvin, J. H. B. Esq., B. C. S. | Europe |
| 1860 Dec. 5. | *Cooper, F. H. Esq., B. C. S. | Europe |
| 1857 Mar. 4. | *Cowell, E. B. Esq., M. A. | Europe |
| 1866 May 2. | *Cox, W. H. Esq. | Europe |
| 1866 Jan. 17. | Crawford, J. A. Esq., C. S. | Calcutta |
| 1861 July 3. | *Crockett, Oliver R. Esq. | China |
| 1867 Feb. 6. | Croft, A. W. Esq. | Calcutta |
| 1867 Aug. 7. | †Curran, R. H. Esq., L. R. C. S. I. L. K. R. C. P. | Port Blair |
| | | |
| 1866 Feb. 7. | †Daly, N. Esq. | Myanounng Birma |
| 1862 April 2. | *Dalrymple, F. A. E. Esq., C. S. | Europe |
| 1847 June 2. | †Dalton, Lieut.-Col. E. T., 9th Regt. B. N. I. | Chota Nag- pore |
| 1861 Mar. 6. | †Davey, N. T. Esq., Revenue Survey. | Dacca |
| 1865 May 3. | †Davies, C. Esq. | Rotasghur |
| 1861 Nov. 6. | †Davies, R. H. Esq., B. C. S. | Oudh |
| 1864 July 6. | Debendra Mullick, Bábu. | Calcutta |

| Date of Election. | | | | |
|-------------------|-------|-----|---|--------------------------|
| 1856 | June | 4. | †DeBourbel, Major R., Bengal Engrs. | Assam |
| 1861 | June | 5. | *Denison, His Excellency Sir W. K. C. B. | Europe |
| 1863 | Feb. | 4. | †Deo Narain Singh, Hon'ble Rajah. | Benares |
| 1861 | Mar. | 6. | *Devereux, Hon'ble H. B., B. C. S. | Europe |
| 1862 | May | 7. | †Dhunpati Sinha Dooghur, Roy Bahadur. | Azimungunge |
| 1853 | Sept. | 7. | Dickens, Lieut.-Col. O. H. | Calcutta |
| 1860 | Nov. | 7. | Digumber Mitra, Babu. | Calcutta |
| 1859 | Sept. | 7. | *Douglas, Lieut.-Col. C. | Europe |
| 1864 | Dec. | 7. | *Dunlop, H. G. Esq. | Europe |
| 1860 | Jan. | 4. | †Duka, Dr. T. | Simla |
| 1867 | June | 5. | †Duthoits, W. Esq., C. S. | Mirzapore |
| 1861 | May | 1. | *Earle, Capt. E. L. Bengal Artillery. | Europe |
| 1857 | May | 6. | *Eatwell, Dr. W. C. B. | Europe |
| 1840 | Oct. | 7. | *Edgeworth, M. P. Esq., B. C. S. | Europe |
| 1863 | May | 6. | †Edgar, J. W. Esq., B. C. S. | Cachar |
| 1865 | Feb. | 1. | †Egerton, P. H. Esq., B. C. S. | Umritsar |
| 1846 | Jan. | 7. | *Elliott, Sir Walter, late M. C. S. | Europe |
| 1859 | Nov. | 2. | †Elliott, C. A. Esq., B. C. S. | Furruckabad |
| 1863 | April | 1. | †Ellis, Hon'ble R. S., C. S. C., B. | Madras |
| 1856 | Mar. | 5. | *Ellis, Lieut.-Col. R. R. W. 23rd Regt. B. N. I. | Europe |
| 1854 | Nov. | 1. | †Elphinstone, Capt. M. W. 4th Regt. B. N. I. | Lahore |
| 1861 | Jan. | 9. | *Erskine, Hon'ble C. J., Bombay C. S. | Europe |
| 1856 | Aug. | 6. | *Erskine, Major W. C. B. | Europe |
| 1863 | Oct. | 7. | Ewart, Dr. J. | Calcutta |
| 1862 | Aug. | 6. | *Eyre, Col. Vincent, C. B. | Europe |
| 1865 | June | 7. | Fawcus, Dr. J. | Calcutta |
| 1851 | May | 7. | Fayrer, Dr. J., B. M. S. | Calcutta |
| 1863 | Jan. | 15. | †Fedden, Francis, Esq., Geol. Survey. | Bombay |
| 1865 | Aug. | 2. | Fenn, S. Esq. | Calcutta |
| 1859 | Oct. | 12. | †Fisher, A. Esq. | China |
| 1860 | Mar. | 7. | *Fitzwilliam, Hon'ble W. S. | Europe |
| 1865 | April | 5. | †Fleming, Dr. J. M. 29th P. N. I. | Nimar Cent. Provinces |
| 1867 | April | 3. | †Ford, Lieut.-Col. B. | Port Blair |
| 1861 | Feb. | 6. | †Forrest, R. Esq., Civil Engineer. | Etawah |
| 1863 | Dec. | 2. | †Forsyth, Lieut. J. | Nagpor |
| 1863 | June | 3. | †Forsyth, T. D. Esq., C. B. | Punjabe |
| 1860 | Mar. | 7. | *Frere, His Excellency Sir H. Bartle, K. C. B., B. C. S. | Europe |
| 1859 | Oct. | 12. | †Furlong, Major J. G. R. | Agra |
| 1859 | Dec. | 7. | Futteh, Ali, Maulvi. | Calcutta |

| Date of Election. | | |
|-------------------|--|---------------------------------------|
| 1867 Sept. 4. | Fyfe, W. The Rev. | Calcutta |
| 1849 Sept. 5. | †Fytche, Lieut.-Col. A. 70th Regt. B. N. I. | Rangoon |
| 1866 Jan. 17. | G. M. Tagore, Esq. | Calcutta |
| 1864 Aug. 11. | †Garrett, C. B. Esq., C. S. | Chittagong |
| 1859 Aug. 3. | Gastrell, Lieut.-Col. J. E., 13th Regt. N. I., Rev. Survey. | Calcutta |
| 1867 Dec. 4. | Gay, E. Esq. | Calcutta |
| 1867 Sept. 4. | Gauvain, Capt. V. | Calcutta |
| 1859 Sept. 7. | Geoghegan, J. Esq., B. C. S. | Calcutta |
| 1865 June 7. | †Giles, A. H. Esq. | Dinajpore |
| 1842 Sept. 2. | *Gladstone, W. Esq. | Europe |
| 1867 May 1. | *Glover, the Hon'ble F. | Europe |
| 1859 Sept. 7. | *Goodeve, E. Esq., M. D. | Europe |
| 1862 July 2. | Gordon, J. D. Esq., C. S. | Calcutta |
| 1864 Dec. 5. | †Gooroochurn Dáss Bábu. | Jungipore |
| 1862 Feb. 5. | †Gourdoss Bysack, Bábu. | Maunbhoom |
| 1863 Nov. 4. | †Gowan, Major J. G. | Morar, Gwalior |
| 1859 Dec. 7. | *Grant, Sir J. P., K. C. B. | Europe |
| 1860 Jan. 4. | *Grant, T. R. Esq. | Europe |
| 1867 Aug. 7. | Granville, W. L. Esq. | Calcutta |
| 1867 June 5. | †Gregory Lieut. J. Depy. Comr. | Naga Hills |
| 1860 July 4. | Grey, Hon'ble W., B. C. S. | Calcutta |
| 1866 June 6. | *Gribble, T. W. Esq., B. C. S. | Europe |
| 1861 Sept. 4. | †Griffin, L. Esq., B. C. S. | Gurdaspore Punjab |
| 1860 Nov. 7. | †Griffith, R. T. H. Esq. | Benares |
| 1849 Aug. 1. | Grote, A. Esq., B. C. S., F. L. S. | Calcutta |
| 1861 Feb. 6. | †Growse, F. S. Esq., B. C. S. | Mynpoorie |
| 1862 Feb. 5. | *Guthrie, Col. C. S., Bengal Engrs. | Europe |
| 1867 July 3. | Hacket, C. A. Esq. | Calcutta |
| 1847 June 2. | *Hall, F. E. Esq., M. A., D. C. L. | Europe |
| 1866 Jan. 17. | †Hamilton, Major T. C. | Amherst B. Birmah |
| 1863 June 3. | *Hamilton, Col. G. W. | Europe |
| 1855 Mar. 7. | †Hamilton, R. Esq. | Wurdah |
| 1828 Nov. 12. | *Hamilton, Sir R. N. E., Bart., B. C. S. | Europe |
| 1847 May 5. | *Hannington, Col. J. C., 63rd Regt. N. I. | Europe |
| 1859 Oct. 12. | *Hardie, Dr. G. K. | Europe |
| 1866 Nov. 7. | Harendra Krishna Kumar. | Calcutta |
| 1862 Oct. 8. | *Harington, Hon'ble H. B. | Europe |
| 1860 Oct. 3. | †Harris, E. B. Esq., C. S. | E. I. Railway Rohnee W. Deoghur |
| 1867 Dec. 4. | Harris J. S. Esq. | Calcutta |

| Date of Election. | | | |
|-------------------|---|--------------|--|
| 1861 Feb. 6. | †Harrison, A. S. Esq., B. A. | Nyneetal | |
| 1859 Oct. 12. | †Haughton, Lieut.-Col J. C., C. S. I. | Cooch Behar | |
| 1862 Aug. 6. | *Heeley, W. L. Esq., C. S. | Europe | |
| 1866 April 4. | Henry, N. A. Esq. | Calcutta | |
| 1859 Aug. 3. | †Henessey, J. B. N. Esq. | Bangalore | |
| 1853 July 6. | †Herschel, W. J. Esq., B. C. S. | Midnapore | |
| 1854 Mar. 1. | *Hichens, Lieut. W., Bengal Engrs. | Europe | |
| 1866 Jan. 17. | †Hicks, J. G. Esq. | Lahore | |
| 1867 Mar. 6. | Hill, F. Esq. | Calcutta | |
| 1860 May 2. | Hobhouse, C. P. Hon'ble B. C. S. | Calcutta | |
| 1850 Sept. 7. | †Hopkinson, H. Lieut.-Col. H. | Assam | |
| 1863 July 1. | †Horne, C. Esq. C. S. | Mynpoorie | |
| 1860 Mar. 7. | Hovenden, Major J. J., Bengal Engrs. | Calcutta | |
| 1863 Jan. 15. | †Howell, M. S. Esq., C. S. | Meerut | |
| 1867 Sept. 4. | †Hughes, A. J. Esq. C. E. | Dariabad | |
| 1867 Aug. 17. | †Hughes, T. H. Esq. A.R.S.M., F.G.S. | Hazarebagh | |
| 1867 Aug. 7. | *Hughes, Lieut. W. G. | Calcutta | |
| 1866 Feb. 7. | Hoyle, G. W. Esq. | Calcutta | |
| 1867 May 1. | †Hyatt, Dr B. N. Civil Surgeon. | Ranchee | |
| | | | |
| 1866 Mar. 7. | †Irvine, W. Esq., C. S. | Mozuffernug- | |
| 1860 Jan. 4. | †Innes, Major J. J. M. | Punjab [ger | |
| 1862 Oct. 8. | †Irwin, Valentine, Esq., C. S. | Tipperah | |
| 1853 Dec. 7. | †Ishureeprasad Sinha, Bahadur, Rajah | Benares | |
| | | | |
| 1864 Sept. 7. | Jackson, Hon'ble E. | Calcutta | |
| 1861 Jan. 9. | Jackson, Hon'ble L. S., B. C. S. | Calcutta | |
| 1841 April 7. | *Jackson, W. B. Esq., B. C. S. | Europe | |
| 1861 Dec. 4. | James, Major H. R. C. B. | Calcutta | |
| 1864 Sept. 7. | *Jardine, R. Esq., C. S. | Europe | |
| 1845 Dec. 3. | †Jerdon, Dr. T. C., M. M. S. | Mussoorie | |
| 1867 Mar. 6. | †Jogindra nath Mulliok Babu. | Andul | |
| 1866 Feb. 7. | †Johnson, W. H. Esq. | Dehra | |
| 1847 June 2. | *Johnstone, J. Esq. | Europe | |
| 1862 Mar. 5. | *Johnstone, Capt. J., Assistant Com- missioner. | Europe | |
| 1867 Dec. 4. | †Johnstone, Lieut. J. Supt. Ele- phant Klamddas. | Cuttack | |
| 1859 Sept. 7. | *Jones, R. Esq. | Europe | |
| 1865 June 7. | †Joykissen, Dás Bahadur, Rajah. | Allyghur | |
| | | | |
| 1866 Mar. 7. | Kadar Nath Mookerjee. | Bhowanipore | |
| 1858 Feb. 3. | Kaliprosonno Singha. Bábu. | Calcutta | |
| 1863 July 1. | *Kane, H. S. Esq., M. D. | Europe | |
| 1850 April 3. | *Kay, The Rev. W., D. D. | Europe | |
| 1861 Dec. 15. | †Kempson, M. Esq., M. A. | Bareilly | |
| 1867 Dec. 4. | †King, G. Esq. M. D. | Jouhpore | |
| 1867 Mar. 6. | †King, Capt. H. W. | India | |

| Date of Election. | | | |
|-------------------|----------|---|-------------------------|
| 1862 | Jan. 15. | †King, W. Esq., Jr, Geol. Survey. | Madras |
| 1867 | Mar. 6. | Knox, G. E. Esq. C. S. | Calcutta |
| 1839 | Mar. 6. | *Laidlay, J. W. Esq. | Europe |
| 1861 | Mar. 6. | *Laing, Hon'ble S. | Europe |
| 1863 | Sept. 2. | Lane, T. B. Esq., B. C. S. | Calcutta |
| 1851 | Dec. 3. | †Layard, Major F. P. | Bhagulpore |
| 1852 | April 7. | Lees, Major W. N., LL. D. | Calcutta |
| 1859 | Dec. 7. | Leonard, H. Esq., C. E. | Calcutta |
| 1865 | June 7. | †Lewin, Capt. T. H. | Chittagong |
| 1856 | Feb. 6. | *Liebig, Dr. G. Von., B. M. S. | Europe |
| 1860 | Jan. 4. | Lindsay, E. J. Esq. | Calcutta |
| 1862 | Dec. 3. | Lobb, S. Esq., M. A. | Hooghly Coll. |
| 1864 | Nov. 2. | Locke, H. H. Esq. | Calcutta |
| 1866 | May 2. | *Lovett, Lieut. B. | Ispahan |
| 1828 | July 2. | *Low, Major-General Sir J., K. C. B. | Europe |
| 1866 | Jan. 17. | †Low, James, Esq., G. T. S. | Dehra Dhoon |
| 1861 | April 3. | Lumsden, Lieut.-Col. P. S. | Calcutta |
| 1854 | Nov. 1. | *Lushington, F. A. Esq., B. C. S. | Europe |
| 1866 | Mar. 7. | †Macdonall, A. P. Esq. | Monghyr |
| 1866 | June 6. | Macdonald, Major J. Staff Corps. | Calcutta |
| 1848 | April 5. | †MacLagan, Lieut.-Col. R., F. R. S. E. | Lahore |
| 1866 | Jan. 17. | *Macgregor, Lieut. C. | Europe |
| 1865 | Nov. 1. | Mackenzie, A. Esq., C. S. | Calcutta |
| 1853 | April 6. | Mackray, Dr. A. O. | Calcutta |
| 1867 | July 3. | Mackenzie, C. S., M. D. | Calcutta |
| 1867 | July 3. | Macnamara, Dr. C. | Calcutta |
| 1863 | Jan. 15. | *Maine, Hon'ble H. S. | Europe |
| 1867 | April 3. | †Mainwaring, Major G. | Darjeeling |
| 1860 | Jan. 4. | Mair, D. K. Esq., M. A. | Calcutta |
| 1865 | Mar. 1. | Malleson, Major G. B. | Calcutta |
| 1862 | Sept. 3. | †Mallet, F. R. Esq. | Nowgong Bunde- lcond |
| 1860 | July 4. | †Man, E. G. Esq. | Bardwan |
| 1852 | Nov. 3. | Manickjee Rustomjee, Esq. | Calcutta |
| 1861 | June 5. | †Mán Sinha Bahadur, Mahárajah. | Oudh |
| 1867 | Mar. 6. | Markby, The Hon'ble W. | Calcutta |
| 1864 | Aug. 11. | *Marks, Rev. J. Ebenezer. | Europe |
| 1850 | Jan. 2. | *Marshman, J. C. Esq. | Europe |
| 1863 | Oct. 7. | †Martin, T. Esq., C. E. | Gowhaty |
| 1863 | Nov. 4. | *McClelland, Dr. J. | Europe |
| 1837 | Oct. 4. | †McLeod, Hon'ble D. F., C. B., B. C. S. | Lahore |
| 1860 | Mar. 7. | †Medlicott, H. B. Esq. F. G. S. | Garrow Hills |
| 1861 | Feb. 6. | Melville, Capt. A. B., late 67th N. I. Surv, Genl.'s Dept. | Calcutta |
| 1855 | Nov. 7. | *Middleton, J. Esq. | Europe |
| 1850 | April 3. | *Mills, A. J. M. Esq., B. C. S. | Europe |

| Date of Election. | | |
|-------------------|--|----------------|
| 1867 April 3. | Mohindralal Sircar, Dr. | Calcutta |
| 1847 April 7. | †Money, D. J., B. C. S. | Bhagulpore |
| 1856 Feb. 6. | *Money, J. W. Esq. | Europe |
| 1867 Mar. 6. | †Montgomerie, Capt. T. G. | Dera Doon |
| 1865 July 5. | †Morland, Major J. | Delhi |
| 1854 Dec. 6. | †Morris, G. G. Esq., B. C. S. | Backergunge |
| 1864 June 1. | †Moula Bukhsh, Khan Bahadur, Maulvi. | Patna |
| 1837 July 5. | *Muir, J. Esq. | Europe |
| 1854 Oct. 11. | Muir, Hon'ble W., B. C. S. | Calcutta |
| 1862 July 2. | *Napier, Major-General Sir R., K. O. B. | Abyssinia |
| 1867 May 1. | Nelson, J. B. Esq. | Calcutta |
| 1860 Nov. 7. | *Newmarch, Lieut.-Col. C. D. | Europe |
| 1865 Feb. 1. | †Newul Kishwar, Moonshee. | Lucknow |
| 1852 Sept. 1. | *Nicholls, Capt. W. T., 24th Regi- ment, M. N. I. | Europe |
| 1863 Jan. 15. | Norman, Hon'ble J. P. | Calcutta |
| 1867 June 5. | Obhoy Churn, Mullick, Babu. | Calcutta |
| 1860 June 4. | †Oldham, C. Esq., Geological Survey. | Madras |
| 1851 June 4. | Oldham, T. Esq., LL. D., F. R. S. | Calcutta |
| 1867 Aug. 7. | †Oldham, A. Esq., C. E. | E. B. Railway. |
| 1864 Dec. 7. | Onslow, D. B. Esq. | Kooshtea |
| 1866 July 4. | †Ormsby, M. H. Esq. | Barrackpore |
| 1837 June 7. | *O'Shaughnessy, Sir W. B. | Chota Nagpore |
| 1847 Feb. 10. | *Ousely, Major W. R. | Europe |
| 1864 Mar. 2. | *Palmer, Dr. W. J. | Europe |
| 1862 May 7. | Partridge, S. B. Esq., M. D. | Calcutta |
| 1867 Feb. 6. | Paul, J. Esq. | Calcutta |
| 1860 Feb. 1. | *Pearse, Major G. G. | Europe |
| 1867 Mar. 6. | Peary Mohun Mookerjee, M. A. | Ottarparah |
| 1864 Mar. 2. | †Pellew, F. H. Esq., C. S. | Burrisal |
| 1865 Sept. 6. | †Peppe, J. H. Esq. | Gya |
| 1867 Nov. 6. | Petit, Mons. Eugene. | Calcutta |
| 1835 July 1. | *Phayre, Lt.-Col. A. P., C. B. | Europe |
| 1864 Nov. 2. | Phear, Hon'ble J. B. | Calcutta |
| 1867 Sept. 4. | Place, Mons. V. Consul Gen. France | Calcutta |
| 1862 Oct. 8. | †Poolin Behary Sen, Bábu. | Berhampore |
| 1839 Mar. 6. | Pratt, Ven'ble Archdeacon J. H., M. A. | Calcutta |
| 1860 Jan. 4. | Preonath Sett, Bábu. | Calcutta |
| 1825 Mar. 9. | *Prinsep, C. R. Esq. | Europe |
| 1837 Feb. 1. | Prosonno Coomar Tagore, Bábu. | Calcutta |

| Date of Election. | | |
|-------------------|---|------------------------|
| 1864 Feb. 3. | †Pullan, Lieut. A., G. T. Survey. | Dehra Dhoon |
| 1853 April 6. | Radha Nath Sikdar, Bábu. | Calcutta |
| 1849 Sept. 5. | Rajendra Dutt, Bábu. | Calcutta |
| 1856 Mar. 5. | Rajendralála Mitra, Bábu. | Calcutta |
| 1864 May 4. | Ramánath Bose, Bábu. | Calcutta |
| 1837 Feb. 1. | Ramánath Tagore, Bábu. | Calcutta |
| 1866 Jan. 17. | †Rattray, A. Esq. | Hidgelee |
| 1860 Mar. 7. | †Reid, H. S. Esq. | Oudh |
| 1867 Feb. 6. | †Reid, Lieut.-Col. B. Governor-Gen- eral's Agent. | ChunilaPunjab |
| 1864 Dec. 7. | †Richardson, R. J. Esq., C. S. | Patna |
| 1857 June 7. | *Riddell, Hon'ble H. B., B. C. S. | Europe |
| 1857 Aug. 6. | †Roberts, Hon'ble A. A., B. C. S. | Panjab |
| 1863 April 1. | †Robertson, C. Esq., C. S. | Nyne Tal |
| 1863 May 6. | †Robertson, H. D. Esq., C. S. | Saharunpore |
| 1865 Feb. 1. | Robinson, S. H. Esq. | Calcutta |
| 1847 Dec. 1. | *Rogers, Capt. T. E. | Europe |
| 1866 Dec. 5. | Ross, J. M. Esq. | Calcutta |
| 1859 Sept. 7. | †Russell, A. E. Esq., B. C. S. | Burdwan |
| 1865 June 7. | †Sárodáprosád Mookerjee, Bábu. | Baraset |
| 1859 Feb. 2. | †Satischunder Roy Mahárajah. | Krishnagur |
| 1856 Aug. 6. | Satyasharana Ghosal, Rajah. | Bhookylas, Calcutta |
| 1861 Dec. 4. | †Saunders, C. B. Esq., B. C. S. | Mysore |
| 1864 June 1. | *Saunders, J. O'B. Esq. | Europe |
| 1854 Dec. 6. | †Saxton, Lt.-Col. G. H., F. G. S. 38th M. N. I. | Ootacamund |
| 1854 May 2. | *Schiller, F. Esq. | Europe |
| 1860 Feb. 1. | *Scott, Col. E. W. S. | Europe |
| 1859 Aug. 3. | †Scott, W. H. Esq. | Dehra Doon |
| 1867 June 5. | Scott, J. M. Esq., B. A., C. E. | Calcutta |
| 1866 Jan. 17. | †Seaton, Capt. W. J. | Rangoon |
| 1863 Sept. 3. | Sama Churn Sircar, Bábu. | Calcutta |
| 1860 July 4. | †Shelverton, G. Esq. | Jubbulpore |
| 1866 Sept. 5. | †Sherer, Major J. F. | Kamroop |
| 1867 April 3. | †Sheriful Omrah, Hon'ble Nabob Bahadur, K. C. S. I. | Madras |
| 1845 Jan. 14. | *Sherwill, Lt.-Col. W. S., 66th Regi- ment B. N. I., F. G. S., F. R. G. S. | Europe |
| 1863 April 1. | †Showers, Lieut.-Col. C. L. | Agra |
| 1866 June 6. | Sime, J. Esq., B. A. | Calcutta |
| 1864 Sept. 7. | †Sladen, Capt. E. B. | Burma |
| 1866 June 6. | †Smart, R. B. Esq. | Kamptee |
| 1865 July 5. | †Smith, D. Boyes, Esq., M. D. | Mussooree |

| Date of Election. | | |
|-------------------|---|------------------------------------|
| 1856 Feb. 6. | *Smith, Col. J. F. | Europe |
| 1854 Sept. 6. | †Spankie, R. Esq., B. C. S. | Agra |
| 1864 Mar. 2. | †Spearman, Lieut. R. | Yangzaleen, British Bur- mah |
| 1860 May 2. | Staunton, Major F. S., Being. Engs. | Barrackpore |
| 1867 May 1. | Steel, Lieut. E. I., R. A. | Debrughur |
| 1843 Sept. 4. | †Stevens, W. H. Esq. C. E. | ? |
| 1867 Dec. 4. | *Stephen, Major J. G., 8th N. I. | Europe |
| 1863 Jan. 15 | Sterndale, R. A. Esq. | Calcutta |
| 1863 Sept. 2. | Stewart, R. D. Esq. | Calcutta |
| 1864 April 6. | †Stewart, J. L. Esq., M. D. | Lahore |
| 1861 Sept. 4. | Stokes, Whitley, Esq. | Calcutta |
| 1863 Nov. 4. | Stoliczka, Dr. F. | Calcutta |
| 1843 May 3. | †Strachey, Col. R., F. R. S., F. L. S., F. G. S. | Bombay |
| 1859 Mar. 2. | †Stubbs, Major F. W., Beng. Artillery. | Meerut |
| 1861 Oct. 2. | †Sudderuddin, Moonshi. | Pundoooh |
| 1858 July 7. | †Sutherland, H. C. Esq., B. C. S. | Backergunje |
| 1864 Aug. 11. | Swinhoe, W. Esq. | Calcutta |
| 1865 Sept. 6. | Tawney, C. H. Esq. | Calcutta |
| 1865 April 5. | Taylor, R. Esq. | Madras |
| 1860 May 2. | Temple, Sir R. Esq., B. C. S. | Calcutta |
| 1859 Mar. 2. | *Theobald, W. Esq., Jr. Geological Survey. | Europe |
| 1860 June 6. | Thompson, J. G. Esq. | Calcutta |
| 1863 Mar. 4. | *Thompson, Major G. H., Bengal. Staff Corps. | Europe |
| 1855 June 6. | *Thompson, Dr. T., M. D., F. R. S. F. L. S., F. R. G. S. | Europe |
| 1853 Nov. 21. | †Thornhill, C. B. Esq., B. C. S. | Allahabad |
| 1863 June 4. | †Thornton, T. H. Esq. | Punjab |
| 1847 June 2. | Thuillier, Lt.-Col. H. L., F. R. G. S. Bengal Artillery. | Calcutta |
| 1863 May 6. | Thuillier, Lt. H. R. | Calcutta |
| 1862 July 2. | *Thurlow, Hon'ble T. J. H. | Europe |
| 1865 July 5. | †Tolbert, T. W. H. Esq., C. S. | Punjab |
| 1865 July 5. | Tonnerre, Dr. C. F. | Calcutta |
| 1862 Feb. 5. | †Torrens, Col. H. D. | Saugor |
| 1861 June 5. | †Tremlett, J. D. Esq., C. S. | Simla |
| 1863 Mar. 4. | *Trevelyan, Right Hon'ble Sir C., K. C. B. | Europe |
| 1841 Feb. 3. | *Trevor, Hon'ble C. B., B. C. S. | Europe |
| 1863 Feb. 4. | Trevor, E. T. Esq., B. C. S. | Calcutta |

| Date of Election. | | | | |
|-------------------|-------|-----|--|-----------------------|
| 1864 | Mar. | 2. | *Trevor, Lt. E. A. Royal Eng. | Europe. |
| 1864 | Sept. | 4. | *Tween, A. Esq., Geological Survey. | Europe |
| 1863 | May | 6. | Tyler, Dr. J. | Mynpowrie |
| 1860 | May | 2. | †Vanrenen, Capt. A., D. late 71st B. N. I. | Camp Barailch Oudh |
| 1864 | Feb. | 3. | †Verchere, A. M., Esq., M. D. | Jellunder |
| 1864 | April | 6. | †Vijayarāma Gajapati Raj Munnia Sultan Bahadur, Maharajah Mirza. | Vizianagaram |
| 1865 | Nov. | 1. | Waldie, D. Esq. | Calcutta |
| 1861 | May | 1. | †Walker, Lt.-Col. J. T., Bom. Engrs. | Dehra Doon |
| 1863 | Dec. | 2. | †Walker, A. G. Esq. C. S. | Khyrabad Oudh |
| 1863 | May | 6. | *Wall, P. W. Esq., C. S. | Europe |
| 1863 | Oct. | 7. | Waller, Dr. W. K. | Calcutta |
| 1863 | Dec. | 2. | Walters, Rev. M. D. C. | Calcutta |
| 1862 | Jan. | 15. | †Ward, G. E. Esq., B. C. S. | Meerut |
| 1852 | July | 7. | *Ward, J. J. Esq., B. C. S. | Europe |
| 1859 | July | 6. | *Warrand, R. H. M. Esq., B. C. S. | Europe |
| 1865 | May | 3. | *Waterhouse, Lieut. J., Royal Artillery, | Europe |
| 1854 | July | 5. | *Watson, J. Esq., B. C. S. | Europe |
| 1847 | Nov. | 3. | *Waugh, Major-General Sir A. S., C. B., F. R. S., F. R. G. S. | Europe |
| 1867 | Feb. | 6. | †Westmacott, E. V. Esq., C. S., B.A. | Manbhoom |
| 1862 | Oct. | 8. | Wheeler, J. T. Esq. | Calcutta |
| 1867 | Aug. | 7. | †Wilcox, F. Esq. Bengal Police, | Manbhoom |
| 1864 | Mar. | 2. | Wilkinson, C. J. Esq. | Calcutta |
| 1861 | Sept. | 4. | †Williams, Dr. C., H. M.'s 68th Regt. | Rangoon |
| 1867 | Jan. | 16. | †Williamson Lieut. W. J. | Goalparah |
| 1867 | Mar. | 6. | †Willson, W. G. Esq. B. A. | Calcutta |
| 1859 | Sept. | 7. | †Wilson, W. L. Esq. | Sangor |
| 1859 | Aug. | 3. | †Wilmot, C. W. Esq. | Pakur |
| 1865 | Feb. | 1. | †Wilmot, E. Esq. | Delhi |
| 1866 | Mar. | 7. | †Wise, Dr. J. F. N. | Dacca |
| 1867 | July | 3. | †Wood, Dr. J. J. | Sangor |
| 1861 | May | 7. | Woodrow, H. Esq., M. A. | Calcutta |
| 1859 | Mar. | 2. | *Wortley, Major A. H. P. | Europe |
| 1862 | Aug. | 6. | Wylie, J. W. Esq., Bombay C. S. | Calcutta |
| 1855 | April | 4. | *Young, Lt.-Col. C. R. | Europe |
| 1856 | July | 2. | *Yule, Lt.-Col. H. | Europe |

LIST OF HONORARY MEMBERS.

| Date of Election. | | | | |
|-------------------|-------|-----|---|---------------|
| 1825 | Mar. | 9. | M. Garcin de Tassy, Membre de l' Inst. | Paris |
| 1826 | " | 1. | Sir John Phillippart. | London |
| 1829 | July | 1. | Count De Noe. | Paris |
| 1831 | " | 7. | Prof. C. Lassen. | Bonn |
| 1834 | Nov. | 5. | Sir J. F. W. Herschel, F. R. S. | London |
| 1834 | " | 5. | Col. W. H. Sykes, F. R. S. | London |
| 1835 | May | 6. | Prof. Lea. | Philadelphia |
| 1842 | Feb. | 4. | Dr. Ewald. | Göttingen |
| 1842 | " | 4. | Right Hon'ble Sir Edward Ryan, K. | London |
| 1843 | Mar. | 30. | Prof. Jules Mohl, Memb. de l' Institut. | Paris |
| 1847 | May | 5. | His Highness Hekekyan Bey. | Egypt |
| 1847 | Sept. | 1. | Col. W. Munro. | London |
| 1847 | Nov. | 3. | His Highness the Nawab Nazim of Bengal. | Moorshedabad |
| 1848 | Feb. | 2. | Dr. J. D. Hooker, R. N., F. R. S. | Kew |
| 1848 | Mar. | 8. | Prof. Henry Princeton. | United States |
| 1853 | April | 6. | Major-Gen. Sir H. C. Rawlinson, K. C., F. R. S., D. C. L. | London |
| 1854 | Aug. | 2. | Col. Sir Proby T. Cantley, K. C.B., F. R. S. | London |
| 1858 | July | 6. | B. H. Hodgson, Esq. | Europe |
| 1859 | Mar. | 2. | Hon'ble Sir J. W. Colville, Kt. | Europe |
| 1860 | " | 7. | Prof. Max Muller. | Oxford |
| 1860 | Nov. | 7. | Mons. Stanislas Julien. | Paris |
| 1860 | " | 7. | Dr. Robert Wight. | London |
| 1860 | " | 7. | Edward Thomas, Esquire. | London |
| 1860 | " | 7. | Dr. Aloys Sprenger. | Germany |
| 1860 | " | 7. | Dr. Albrecht Weber. | Berlin |
| 1865 | Sept. | 6. | Edward Blyth, Esquire. | Europe |

LIST OF CORRESPONDING MEMBERS.

| | | | | |
|------|------|----|---------------------------------------|------------|
| 1844 | Oct. | 2. | Macgowan, Dr. J. | Europe |
| 1856 | June | 4. | Kremer, Mons. A. Von. | Alexandria |
| 1856 | " | 4. | Porter, Rev. J. | Damascus |
| 1856 | " | 4. | von Schlagintweit, Herr H. | Berlin |
| 1856 | " | 4. | Smith, Dr. E. | Beyrout |
| 1856 | " | 4. | Tailor, J. Esquire. | Bussorah |
| 1856 | " | 4. | Wilson, Dr. | Bombay |
| 1857 | Mar. | 4. | Neitner, J. Esquire. | Ceylon |
| 1858 | Mar. | 3. | von Schlagintweit, Herr H. R. | Berlin |
| 1859 | Nov. | 2. | Frederick, Dr. H. | Batavia |
| 1859 | May | 4. | Bleeker, Dr. H. | Batavia |
| 1860 | Feb. | 1. | Baker, The Rev. H. | E. Malabar |
| 1860 | " | 1. | Swinhoe, R., Esq., H. M.'s Consulate. | Amoy |

| Date of Election | | | |
|------------------|----------|-----------------------------|---------|
| 1860 | April 4. | Hung, Dr. M. | Poonah |
| 1861 | July 3. | Gosche, Dr. R. | Berlin |
| 1862 | Mar. 5. | Murray, A., Esquire. | London |
| 1863 | Jan. 15. | Goldstücker, Dr. T. | London |
| 1863 | July 4. | Barnes, R. H. Esquire. | Ceylon |
| 1866 | May 7. | von Schalgintweit, Prof. F. | Prussia |
| 1866 | " 7. | Sherring, Rev. M. A. | Europe |

LIST OF ASSOCIATE MEMBERS.

| | | | |
|------|---------|--------------------------|----------|
| 1835 | Oct. 7. | Stephenson, J., Esquire. | Europe |
| 1838 | Feb. 7. | Keramut Ali, Saied. | Hooghly |
| 1843 | Dec. 6. | Long, Rev. J. | Calcutta |
| 1865 | May 3. | Dall, Rev. C. H. A. | Calcutta |

ELECTIONS IN 1867.

Ordinary Members.

| | |
|---|-----------------|
| G. A. D. Anley, Esq. | Calcutta |
| Lieut. W. J. Williamson, | Goalpara |
| Col. J. C. Brooke, | Barrackpore |
| A. W. Croft, Esq. | Calcutta |
| J. A. Paul, Esq. | Calcutta |
| Lieut.-Col. B. Reid, | Chamila |
| E. V. Westmacott, Esq. C. S., B. A. | Manbhoom |
| The Hon'ble W. Markby, | Calcutta |
| Baboo Peary Mohun Mookerjee, M. A. | Utturparah |
| Capt. H. W. King, P. L. O. Service, | Calcutta |
| Baboo Jogindra Mullick, | Andul |
| G. E. Knox, Esq. B. C. S. | Calcutta |
| W. G. Wilson, Esq. B. A. | Calcutta |
| Capt. T. G. Montgomerie, | Dehra Dhoon |
| F. Hill, Esq. | Calcutta |
| Lieut.-Col. B. Ford, | Port Blair |
| Baboo Mohindralal Sircar, | Calcutta |
| Major G. Mainwaring, | Darjiling |
| The Hon'ble Nawab Sir Sheriful, Omrah Bahadur. K. | C. S. I. Madras |
| The Hon'ble F. Glover, | Calcutta |
| S. C. Mackenzie, Esq. M. D. | Calcutta |
| Lieut. E. J. Steel, R. A. Rev. Sur. | Assam |
| E. Bonavia, Esq. M. D. | Lucknow |

| | |
|--|--------------|
| J. B. Nelson, Esq. | Calcutta |
| D. B. N. Hyatt, Civil Surgeon, | Ranche |
| W. Duthoit, Esq. C. S. | Merzapore |
| Lieut. J. Gregory, Depty. Commissioner, | Naga Hills |
| Calcutta Lord Bishop Cal. The Right Rev. | Calcutta |
| Baboo Obboy Churn Mullick, | Calcutta |
| J. M. Scott, Esq. | Calcutta |
| Dr. C. Macnamara, | Calcutta |
| N. A. Belletty, Esq. | Cherrapunjee |
| Dr. J. I. Wood, | Calcutta |
| C. A. Hacket, Esq. | Calcutta |
| C. F. Ameroy, Esq. | Lahore |
| T. H. Hughes, Esq. A. R. S. M., F. G. S. | Lahore |
| W. L. Granville, Esq. | Calcutta |
| R. H. Curran, Esq. L. R. C. S., J. L. K., Q. C. P. | Port Blair |
| F. Wilcox, Esq. Beng. Police. | { Purulia, |
| | { Manbhoom |
| | { E. B. Ry. |
| | { Kooshtea |
| A. Oldham, Esq. C. E. | Calcutta |
| Dr. A. C. Macrae, | Calcutta |
| The Rev. W. C. Fyfe, | Calcutta |
| Capt. V. Gauvain, | Calcutta |
| Mons. V. Place, Consul, Gen. France, | Calcutta |
| A. J. Hughes, Esq. C. E. | Daria Dabad |
| Lieut. J. Butler, | Assam |
| Mons. Eugene Petit, | Calcutta |
| J. S. Harris, Esq. | Calcutta |
| W. H. Stevens, Esq. | Calcutta |
| E. Gay, Esq. | Calcutta |
| F. J. Chambers, Esq. | Calcutta |
| G. King, Esq. M. D. | Gornah |
| Lieut. J. Johnstone, | Midnapore |
| J. W. Chisholm, Esq. | Belaspore |

LOSS OF MEMBERS DURING THE YEAR, 1867.

ORDINARY MEMBERS.

By retirement.

| | |
|------------------------|-----------|
| Dr. R. D. Bird, | Howrah |
| Lieut. H. Trotter, | Meerut |
| The Hon'ble G. Loch, | Calcutta |
| C. W. Hatton, Esq. | Calcutta |
| E. W. Clementson, Esq. | Tumlook |
| Capt. W. G. Murray, | Mussoorie |
| W. H. Stevens, | Fattyghur |
| H. Leeds, Esq. | Burmah |
| J. H. Matthews, Esq. | Calcutta |

| | |
|----------------------------------|---------------|
| Lient.-Col. H. Raban, | Calcutta |
| Capt. M. Loyd. | Toung-hoo |
| Capt. W. Ramsden. | Cawnpore |
| Lient.-Col. H. Rallard, C. B. | Calcutta |
| Baboo Hurry Dass Dutt, | Calcutta |
| Capt. G. C. Depree., | Chota Nagpore |
| Baboo Bumkin Chunder Chatterjee, | Calcutta |
| Baboo Soorut Nath Mullick, | Howrah |
| The Hon'ble E. Drummond, | Allahabad |
| E. S. Robertson, Esq. | Azinghur |
| The Rev. J. C. Broune, | Calcutta |

By Death.

| | |
|---|-------------|
| Lient.-Col. W. D. Short, R. E. | Europe |
| Major-Genl. Sir J. B. Hearsay, K. C. B. | Europe |
| The Hon'ble Sumboo Nath Pundit, | Bhowanipore |
| Baboo Jadava Krishna Sing. | Calcutta |
| Capt. A. R. Fuller. | Lahore |

HONORARY MEMBERS.
Deceased.

| | |
|--|------------|
| M. Reinaud, Membre de l'Institut Prof. d'Arabe [in 1866] | |
| Prof. F. Bopp, | Europe |
| Col. Sir George Everest, Kt. F. R. S. | Europe |
| Rajah Radha Kant Deb, Bahadur K. S. I. | Brindabund |

ABSTRACT STATEMENT
OF
RECEIPTS AND DISBURSEMENTS
OF THE
ASIATIC SOCIETY,
FOR
THE YEAR 1867.

STATEMENT
Abstract of the Cash Account

| RECEIPTS. | | 1867. | 1866. |
|---|----------------|-------------|-----------|
| ADMISSION FEES. | | | |
| Received from New Members, | Rs. 1,504 0 0 | 1,504 0 0 | 1,280 0 0 |
| CONTRIBUTIONS. | | | |
| Received from Members, | ... 8,373 13 6 | 8,373 13 6 | 8,676 0 0 |
| JOURNAL. | | | |
| Sale proceeds of, and Subscription to the Journal of the Asiatic Society, | 2,749 10 0 | | |
| Refund of Postage Stamps, | ... 60 4 6 | | |
| Ditto of Packing Charges, | ... 5 7 3 | | |
| Ditto of Freight, ... | ... 5 0 0 | | |
| | | 2,820 5 9 | 1,327 1 0 |
| LIBRARY. | | | |
| Sale proceeds of Books, ... | ... 417 12 0 | | |
| Refund of Freight, ... | ... 19 14 0 | | |
| | | 437 10 0 | 610 2 9 |
| SECRETARY'S OFFICE. | | | |
| Refund of Postage Stamps, | ... 13 12 6 | | |
| Ditto of Packing Charges, | ... 2 8 0 | | |
| Savings, ... | ... 1 1 3 | | |
| | | 17 5 9 | 22 13 0 |
| GENERAL ESTABLISHMENT. | | | |
| Savings, ... | ... 1 4 6 | | |
| | | 1 4 6 | 17 1 0 |
| VESTED FUND. | | | |
| Received Interest on the Government Securities from the Bank of Bengal, | 110 0 0 | | |
| | | 110 0 0 | 8,142 8 6 |
| COIN FUND. | | | |
| Sale proceeds of Silver Coins, | ... 8 8 0 | | |
| | | 8 8 0 | 5 0 0 |
| MUSEUM TRANSFER ACCOUNT. | | | |
| Refund of the amount advanced, | ... 111 1 0 | | |
| | | 111 1 0 | |
| O. P. FUND. | | | |
| Refund of the Loan paid on the 31st August, ... | ... 4 6 11 | | |
| Received by Transfer from Messrs. Williams and Norgate, Sale proceeds of Bibliotheca Indica through them, ... | ... 161 4 0 | | |
| | | 165 10 11 | |
| SIR WILLIAM JONES'S MONUMENT. | | | |
| Received from the Government of India for repairing the Monument, ... | 680 0 0 | | |
| | | 680 0 0 | |
| Carried over, Rs. | | 14,229 11 5 | |

No. 1.

of the Asiatic Society for 1867.

DISBURSEMENTS.

| | | 1867. | 1866. |
|---|-------------|-----------|-------------|
| JOURNAL. | | | |
| Freight, ... | Rs. 115 1 0 | | |
| Printing charges, ... | 3,145 2 9 | | |
| Purchase of Postage Stamps, ... | 183 6 9 | | |
| Lithographing and Engraving Charges, &c., ... | 469 6 6 | | |
| Commission on Sale of Books, ... | 103 13 9 | | |
| Purchase of Journal, ... | 7 8 0 | | |
| Ditto of Papers for the Journal, ... | 318 15 9 | | |
| Petty charges, ... | 6 1 0 | | |
| | | 4,349 7 6 | 2,799 15 10 |
| LIBRARY. | | | |
| Salary of the Librarian, ... | 840 0 0 | | |
| Establishment, ... | 90 0 0 | | |
| Book Binding, ... | 311 4 0 | | |
| Commission on sale of Books, ... | 61 13 3 | | |
| Purchase of Books, ... | 1,848 4 9 | | |
| Ditto of Custom Receipt Stamps, ... | 1 0 0 | | |
| Landing charges, ... | 13 11 6 | | |
| Postage Stamps, ... | 2 3 0 | | |
| Salary of Office Pankha-man, ... | 24 2 6 | | |
| Petty charges, ... | 14 14 6 | | |
| | | 3,207 5 6 | 5,250 10 9 |
| SECRETARY'S OFFICE. | | | |
| General Establishment, ... | 294 0 0 | | |
| Secretary's Office Establishment, ... | 1,106 13 4 | | |
| Purchase of Postage Stamps, ... | 92 9 0 | | |
| Ditto of Stationery, ... | 44 7 3 | | |
| Ditto of 5 numbers of Army List, ... | 25 0 0 | | |
| Ditto of a copy of Bengal Directory, ... | 10 0 0 | | |
| Ditto of 2 copies of Sheet Almanac for 1867 and 1868, ... | 2 0 0 | | |
| Ditto of a Blank Book, ... | 7 8 0 | | |
| Printing charges, ... | 31 8 0 | | |
| Insufficient Postage, ... | 2 7 0 | | |
| Bearing Postage, ... | 1 14 0 | | |
| Petty charges, ... | 15 4 0 | | |
| | | 1,633 6 7 | 1,784 2 3 |
| VESTED FUND. | | | |
| Commission to the Bank of Bengal for drawing interest on the Government Securities, ... | 0 4 4 | | |
| | | 0 4 4 | 3,284 9 10 |
| COIN FUND. | | | |
| Purchase of Coins, ... | 328 2 0 | | |
| A Teak wood case for the new Coin Cabinet, ... | 79 0 0 | | |
| Banghee expenses for returned Coins, ... | 4 8 0 | | |
| Bearing Postage on a parcel of Coins, ... | 3 12 0 | | |
| Petty charges, ... | 2 8 6 | | |
| | | 417 14 6 | 503 3 3 |
| Carried over, Rs. 9,608 6 5 | | | |

RECEIPTS.

Brought over, Rs. 14,229 11 5

MESSRS. WILLIAMS AND NORGATE.

| | | | | |
|--------------------------------------|-----|----|-----|------------|
| Received by Sale proceeds of their | | | | |
| Books, | 6 | 2 | 0 | |
| Ditto from Babu Pratápachandra | | | | |
| Ghoshia as deposit on their account, | 6 | 0 | 0 | |
| Ditto from Sayyid Káramat Ali as | | | | |
| deposit on their account, being the | | | | |
| price of two numbers of the Kamil, | 6 | 0 | 0 | |
| Ditto by Books supplied to the As. | | | | |
| Society, | 281 | 10 | 0 | |
| | | | | |
| | | | 299 | 12 0 4 4 0 |

DR. A. M. VERCHERE.

| | | | | | |
|----------------------------|-----|---|----|----|---|
| Refund of Banghy Expenses, | ... | 0 | 14 | 0 | |
| | | | | | |
| | | | 0 | 14 | 0 |

H. BEVERLY, Esq.

| | | | | | |
|---------------------------|-----|---|----|----|---|
| Refund of Postage Stamps, | ... | 0 | 13 | 0 | |
| | | | | | |
| | | | 0 | 13 | 0 |

P. CARNEGIE, Esq.

| | | | | | |
|--------------------------------|-----|---|---|---|---|
| Refund of the amount advanced, | ... | 1 | 0 | 0 | |
| | | | | | |
| | | | 1 | 0 | 0 |

A. G. WALKER, Esq.

| | | | | | |
|-------------------------------------|-----|---|----|---|---|
| Refund of the Insufficient Postage, | ... | 7 | 0 | 0 | |
| Received on Deposit, ... | ... | 6 | 0 | 0 | |
| | | | | | |
| | | | 13 | 0 | 0 |

DR. C. BALLANTYNE.

| | | | | | |
|-------------------------------------|-----|---|-----|---|---|
| Received on account of the Journal, | 307 | 0 | 0 | | |
| | | | | | |
| | | | 307 | 0 | 0 |

DAMODARA JETHA, Esq.

| | | | | | |
|--------------------------|-----|----|----|---|---|
| Received on Deposit, ... | ... | 89 | 0 | 0 | |
| | | | | | |
| | | | 89 | 0 | 0 |

REV. H. A. JÄESCHKE.

| | | | | | |
|--|-----|---|---|---|-------|
| Received by Sale proceeds of a Copy of | | | | | |
| Tibetan Grammar, ... | ... | 1 | 0 | 0 | |
| | | | | | |
| | | | 1 | 0 | 0 |
| | | | | | 1 0 0 |

H. C. SUTHERLAND, Esq.

| | | | | | |
|---------------------------|-----|---|---|---|---|
| Refund of Postage Stamps, | ... | 1 | 3 | 0 | |
| | | | | | |
| | | | 1 | 3 | 0 |

C. J. CAMPBELL, Esq.

| | | | | | |
|---------------------------|-----|---|---|---|---|
| Refund of Postage Stamps, | ... | 0 | 2 | 0 | |
| | | | | | |
| | | | 0 | 2 | 0 |

G. W. CLINE, Esq.

| | | | | | |
|--------------------------|-----|----|----|---|---|
| Received on Deposit, ... | ... | 10 | 0 | 0 | |
| | | | | | |
| | | | 10 | 0 | 0 |

DR. J. L. STEWART.

| | | | | | |
|-------------------------------------|-----|---|----|----|---|
| Refund of the amount paid for send- | | | | | |
| ing Library Books, ... | ... | 0 | 12 | 0 | |
| | | | | | |
| | | | 0 | 12 | 0 |

LT. J. BUTLER.

| | | | | | |
|--------------------------|-----|---|---|---|---|
| Received on Deposit, ... | ... | 7 | 8 | 0 | |
| | | | | | |
| | | | 7 | 8 | 0 |

G. E. WARD, Esq.

| | | | | | |
|---------------------------|-----|---|----|----|---|
| Refund of Postage Stamps, | ... | 0 | 14 | 0 | |
| | | | | | |
| | | | 0 | 14 | 0 |

BABU PRASANNACUMÁRA THÁKURA.

| | | | | | |
|----------------------------------|-----|----|----|---|-----------|
| Refund of the amount paid on the | | | | | |
| 24th October, 1866, ... | ... | 25 | 0 | 0 | |
| | | | | | |
| | | | 25 | 0 | 0 |
| | | | | | 1,648 8 6 |

Carried over, Rs. 14,987 9 5

DISBURSEMENTS.

Brought over, Rs. 9,608 6 5

BUILDING.

| | | | | | | | | |
|-------------------------|-----|-----|---|---|-----|---|---|------------|
| Assessment, ... | ... | 480 | 0 | 0 | | | | |
| Ditto for Lighting, ... | ... | 96 | 0 | 0 | | | | |
| Police Rate, ... | ... | 72 | 0 | 0 | | | | |
| Repairing, ... | ... | 5 | 8 | 0 | | | | |
| | | | | | 653 | 8 | 0 | 2,634 15 0 |

INDIAN MUSEUM.

| | | | | | | | | |
|--------------------------------------|-----|----|---|---|----|----|---|------------|
| Paid Bearing Banghee for Skulls, ... | ... | 11 | 4 | 0 | | | | |
| Ditto ditto Bearing Postage, ... | ... | 1 | 8 | 0 | | | | |
| | | | | | 12 | 12 | 0 | 6,272 11 3 |

MUSEUM CATALOGUE.

| | | | | | | | | |
|---|-----|-----|----|---|-----|---|---|--|
| Salary for preparing Catalogue, ... | ... | 706 | 2 | 3 | | | | |
| Cooly and Charcoal for Branding Specimens, ... | ... | 19 | 6 | 6 | | | | |
| Re-engraving, 2 Brands for marking Specimens, ... | ... | 4 | 8 | 0 | | | | |
| Purchase of Stationery for copying Catalogue, ... | ... | 21 | 4 | 0 | | | | |
| Binding Bird Catalogue, ... | ... | 1 | 12 | 0 | | | | |
| A Tin Box for keeping Catalogue, ... | ... | 1 | 2 | 0 | | | | |
| | | | | | 754 | 2 | 9 | |

ZOOLOGICAL GARDEN.

| | | | | | | | | |
|--------------------------------|-----|---|----|---|---|----|---|--|
| 200 English Envelopes for, ... | ... | 1 | 14 | 0 | | | | |
| | | | | | 1 | 14 | 0 | |

MISCELLANEOUS.

| | | | | | | | | |
|--|-----|-----|----|---|-----|---|---|---------|
| Salary of the Mally, ... | ... | 57 | 0 | 0 | | | | |
| Printing charges, ... | ... | 20 | 0 | 0 | | | | |
| Meeting charges, ... | ... | 147 | 0 | 6 | | | | |
| Purchase of Receipt Stamps, ... | ... | 6 | 0 | 0 | | | | |
| Repairing and cleaning a Clock, ... | ... | 16 | 0 | 0 | | | | |
| Purchase of a ream of Letter Paper, ... | ... | 2 | 4 | 0 | | | | |
| Copying charges, ... | ... | 3 | 13 | 0 | | | | |
| Advertising charges, ... | ... | 5 | 4 | 0 | | | | |
| Purchase of Wall Shades, &c., ... | ... | 6 | 6 | 9 | | | | |
| Fee to the Bank of Bengal for Stamp- ing Cheques, ... | ... | 1 | 9 | 0 | | | | |
| Petty charges, ... | ... | 31 | 11 | 0 | | | | |
| | | | | | 297 | 0 | 3 | 362 4 9 |

PROFIT AND LOSS,

| | | | | | | | | |
|-----------------------------|-----|-----|---|---|-----|---|---|--|
| Stolen by Thákura Sing, ... | ... | 144 | 0 | 0 | | | | |
| | | | | | 144 | 0 | 0 | |

O. P. FUND.

| | | | | | | | | |
|-------------------|-----|----|----|---|----|----|---|--|
| Paid on Loan, ... | ... | 45 | 13 | 9 | | | | |
| | | | | | 45 | 13 | 9 | |

MESSRS. WILLIAMS AND NORGATE.

| | | | | | | | | |
|--|-----|-----|----|---|-----|----|---|-------|
| Paid by transfer to sale of Journal, ... | ... | 276 | 12 | 0 | | | | |
| Ditto ditto of Library, ... | ... | 10 | 12 | 0 | | | | |
| Ditto ditto of Bibliotheca Indica, (O. P. F.) ... | ... | 161 | 4 | 0 | | | | |
| | | | | | 448 | 12 | 0 | 8 0 0 |

Carried over, Rs. 11,966 5 2

RECEIPTS.

| | | | | | |
|---|-----|--------------------------|---|-----|-----|
| | | Brought over, Rs. 14,987 | | 9 | 5 |
| BABU PURNACHANDRA BASAKA. | | | | | |
| Refund in full of the Amount paid him | | | | | |
| as advance, | ... | 95 | 0 | 0 | |
| | | <hr/> | | 95 | 0 0 |
| BAPTIST MISSION PRESS. | | | | | |
| Received from the Hon'ble G. Campbell for Printing Charges, | | 52 | 8 | 0 | |
| | | <hr/> | | 52 | 8 0 |
| MATHURAMOHANA KARA. | | | | | |
| Refund of the amount paid for preparing Cabinet, | | 45 | 0 | 0 | |
| | | <hr/> | | 45 | 0 0 |
| | | | | 200 | 0 0 |
| M. S. HOWELL, Esq. | | | | | |
| Refund of Postage Stamps, | | 0 | 2 | 0 | |
| | | <hr/> | | 0 | 2 0 |
| M. H. ORMSBY, Esq. | | | | | |
| Refund of the amount paid on the 30th November, 1867, .. | | 5 | 4 | 0 | |
| | | <hr/> | | 5 | 4 0 |

Carried over, Rs. 15,185 7 5

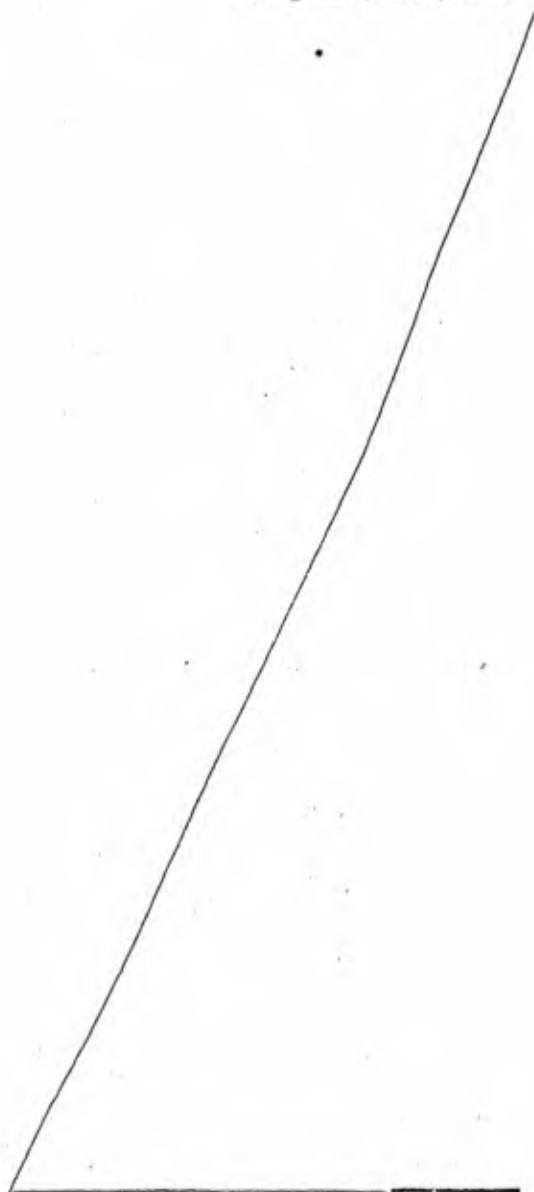
DISBURSEMENTS.

Brought over, Rs, 11,966 5 2

| | | | |
|---|-----|----|---------|
| DR. C. BALLANTYNE. | | | |
| Paid for a Copy of Productive Resources of India, | 7 | 0 | 0 |
| Ditto by transfer to the Journal and Library Account, | 300 | 0 | 0 |
| | | | 307 0 0 |
| DAMODARA JETHA, Esq. | | | |
| Paid on his deposit, | 89 | 0 | 0 |
| | | | 89 0 0 |
| REV. H. A. JÄESCHKE. | | | |
| Paid Insufficient Postage on a letter, | 0 | 8 | 0 |
| Ditto Postage for sending letter, | 0 | 2 | 0 |
| | | | 0 10 0 |
| C. J. CAMPBELL, Esq. | | | |
| Paid Postage for sending a copy of a Chart, | 0 | 2 | 0 |
| | | | 0 2 0 |
| DR. J. L. STEWART. | | | |
| Paid Postage for sending Library Books, | 0 | 12 | 0 |
| | | | 0 12 0 |
| LT. J. BUTLER. | | | |
| Paid Freight for sending Library Books, | 1 | 8 | 0 |
| Ditto for 2 Deal wood Insect Cases, | 7 | 8 | 0 |
| Ditto for Freight and Packing charges for ditto, | 2 | 15 | 0 |
| | | | 11 15 0 |
| G. E. WARD, Esq. | | | |
| Paid Banghy Expenses for sending Library Books, | 2 | 0 | 9 |
| | | | 2 0 0 |
| | | | 0 14 0 |
| BABU PRASANNACUMÄRA THÄKURA. | | | |
| Paid Freight for sending Books to Messrs. Williams and Norgate, | 25 | 0 | 0 |
| | | | 25 0 0 |
| BAPTIST MISSION PRESS. | | | |
| Paid for printing 300 copies of Words and Phrases for the Hon'ble G. Campbell, | 5 | 0 | 0 |
| | | | 5 0 0 |
| A. G. WALKER, Esq. | | | |
| Paid Messrs. R. C. Lepage and Co. | 6 | 0 | 0 |
| | | | 6 0 0 |
| M. S. HOWELL, Esq. | | | |
| Paid Postage for sending a copy of a Chart, | 0 | 2 | 0 |
| | | | 0 2 0 |
| M. H. ORMSBY, Esq. | | | |
| Paid for a Deal wood Insect Case, | 3 | 12 | 0 |
| Ditto for an Insect Net, | 1 | 8 | 0 |
| | | | 5 4 0 |
| GOVERNMENT NORTH WESTERN PROVINCES. | | | |
| Paid Freight for sending Journal and Proceeding, | 10 | 14 | 0 |
| | | | 10 14 0 |
| | | | 14 8 0 |
| Carried over, Rs. 12,430 0 2 | | | |

RECEIPTS.

Brought over, Rs. 15,185 7 5



Carried over, Rs. 15,185 7 5

DISBURSEMENTS.

Brought over, Rs. 12,430 0 2

| | | | |
|--|----|----|---------|
| E. B. COWELL, Esq. | | | |
| Paid Radhanatha Pandita for copying MSS., | 74 | 4 | 0 |
| | 74 | 4 | 0 |
| C. HORN, Esq. | | | |
| Paid Postage for sending Charts, | 0 | 7 | 0 |
| | 0 | 7 | 0 |
| JAMES BEAMES, Esq. | | | |
| Paid Postage Stamps for sending Library Books, &c. | 3 | 2 | 0 |
| | 3 | 2 | 0 |
| | | | 4 1 0 |
| LT. W. C. RAMSDEN. | | | |
| Paid Postage Stamps for sending Chart, | 0 | 2 | 0 |
| | 0 | 2 | 0 |
| E. T. ATKINSON, Esq. | | | |
| Paid Postage Stamps for sending Chart, | 0 | 2 | 0 |
| | 0 | 2 | 0 |
| | | | 12 10 3 |
| J. D. TREMLETT, Esq. | | | |
| Paid Postage Stamps for sending Chart, | 0 | 2 | 0 |
| | 0 | 2 | 0 |
| | | | 0 2 0 |
| W. IRVINE, Esq. | | | |
| Paid Postage and Packing charges for sending Library Books, | 7 | 7 | 0 |
| | 7 | 7 | 0 |
| | | | 3 13 3 |
| R. E. FORREST, Esq. | | | |
| Paid Postage for returning a small packet of Coins, | 2 | 5 | 0 |
| | 2 | 5 | 0 |
| | | | 2 5 0 |
| F. S. GROWSE, Esq. | | | |
| Paid Insufficient Postage on a Pamphlet, | 0 | 1 | 0 |
| | 0 | 1 | 0 |
| | | | 0 1 0 |
| COL. E. T. DALTON, ON ETHNOLOGY OF BENGAL. | | | |
| Paid Bearing Bangles on Packages of MSS., | 0 | 12 | 0 |
| Ditto copying charges of the Rev. Hasselmeyer's Paper, | 3 | 6 | 0 |
| Ditto Printing charges, | 42 | 0 | 0 |
| | 46 | 2 | 0 |
| | | | 13 4 0 |
| MAJOR G. MAINWARING. | | | |
| Paid Postage for sending Library Books, | 2 | 4 | 0 |
| | 2 | 4 | 0 |
| | | | 2 4 0 |
| CAPT. A. D. VANRENNEN. | | | |
| Paid Postage for sending Library Books, | 0 | 10 | 0 |
| | 0 | 10 | 0 |
| | | | 0 10 0 |
| Carried over, Rs. 12,667 0 2 | | | |

RECEIPTS.

| | | | |
|---------------------------------------|-----|---------|----------------|
| GOVERNMENT NORTH WESTERN PROVINCES. | | | |
| Brought over, Rs. 15,185 7 5 | | | |
| Refund of postage for sending Journal | | | |
| and Proceedings for 1866, | ... | 14 8 0 | |
| | | <hr/> | 14 8 0 16 5 0 |
| BALANCE OF 1866. | | | |
| In the Bank of Bengal, ... | ... | 830 2 0 | |
| Cash in hand, ... | ... | 63 3 2 | |
| | | <hr/> | 893 5 2 |
| | | | <hr/> |
| | | | Rs. 16,093 4 7 |
| | | | <hr/> |

Examined,
Sd. PRATÁPACHANDRA GHOSH,
Asst. Secy.
Asiatic Society, Bengal.

Errors and Omissions Excepted,
Sd. BUDDINATH BYSACK,
Cash Keeper,
Asiatic Society, Bengal.

Examined and found correct,
Sd. J. ANDERSON PAUL, }
„ H. BLOCHMANN, } Auditors.

DISBURSEMENTS.

Brought over, Rs. 12,567 0 2

BALANCE.

| | | | | | | |
|----------------------------|-----|-------|----|---|------------|-----|
| In the Bank of Bengal, ... | ... | 3,487 | 12 | 1 | | |
| Cash in hand, ... | ... | 38 | 8 | 4 | | |
| | | | | | 3,526 | 4 5 |
| | | | | | | |
| | | | | | Rs. 16,093 | 4 7 |

Examined,
Sd PRATÁPACHANDRA GHOSHA,
Asst. Secy.
Asiatic Society, Bengal.

Errors and Omissions Excepted,
Sd. BUDDINATH BYSACK,
Cash Keeper,
Asiatic Society, Bengal.

Examined and found correct.

Sd. J. ANDERSON PAUL, }
" H. BLOCHMANN, } *Auditors.*

STATEMENT
Abstract of the Cash Account

| RECEIPTS. | | 1867. | 1866. |
|---|----------------|------------|------------|
| ORIENTAL PUBLICATIONS. | | | |
| Received by Sale of Bibliotheca, | Rs. 2,346 12 0 | | |
| Ditto by Subscription to ditto, | ... 112 6 0 | | |
| Ditto by Sale of White Yajurveda, | ... 38 0 0 | | |
| Refund of Postage Stamps, | ... 58 10 9 | | |
| Ditto of Packing Charges, | ... 3 0 0 | | |
| | <hr/> | 2,558 12 9 | 2,548 12 0 |
| GOVERNMENT ALLOWANCE. | | | |
| Received from the General Treasury, | | | |
| at 500 Rs. per month, | ... 6,000 0 0 | | |
| | <hr/> | 6,000 0 0 | 6,000 0 0 |
| VESTED FUND. | | | |
| Received Interest on the Government | | | |
| Securities from the Bank of Bengal, | 442 8 0 | | |
| | <hr/> | 442 8 0 | 442 8 0 |
| ASIATIC SOCIETY OF BENGAL. | | | |
| Received on Loan, | ... 45 13 9 | | |
| | <hr/> | 45 13 9 | |
| VAINAN ABASI MODOCK, Esq. | | | |
| Received on Deposit, | ... 120 0 0 | | |
| | <hr/> | 120 0 0 | |
| V. B. SOOBIAH, Esq. | | | |
| Received on Deposit, | ... 1 9 6 | | |
| | <hr/> | 1 9 6 | |
| HIS HIGHNESS THE FIRST PRINCE OF TRAVANCORE. | | | |
| Received on Deposit, | ... 1 8 3 | | |
| | <hr/> | 1 8 3 | |
| A. NARAIN ROW, Esq. | | | |
| Received on account of Bibliotheca | | | |
| Indica, | ... 25 7 0 | | |
| | <hr/> | 25 7 0 | |
| K. ROGHUNATH ROW, Esq. | | | |
| Received on Deposit, | ... 49 8 0 | | |
| | <hr/> | 49 8 0 | 22 4 3 |
| DAMODARA JETHA, Esq. | | | |
| Received on account of Bibliotheca | | | |
| Indica, | ... 511 0 0 | | |
| | <hr/> | 511 0 0 | |
| DAMAROO BULLABH, Esq. | | | |
| Received on Deposit, | ... 4 14 0 | | |
| | <hr/> | 4 14 0 | |
| DR. C. BALLANTYNE. | | | |
| Refund of Packing Charges, | ... 2 14 0 | | |
| | <hr/> | 2 14 0 | |
| BABU BRAJABHUSHANA DÁSA. | | | |
| Received from him on account of | | | |
| Bibliotheca Indica, | ... 50 0 0 | | |
| | <hr/> | 50 0 0 | |
| Brought over, Rs. | | 9,813 13 3 | |

No. 2.

Oriental Fund for 1867.

DISBURSEMENTS.

1867.

1866.

ORIENTAL PUBLICATIONS.

| | | | |
|---------------------------------------|-----|----|---|
| Paid Commission on the Sale of Books, | 330 | 12 | 9 |
| Freight, ... | 166 | 2 | 0 |
| Packing Charges, ... | 27 | 8 | 0 |
| Purchase of Postage Stamps, ... | 114 | 9 | 6 |
| Printing Charges, ... | 31 | 0 | 0 |
| Petty Charges, ... | 4 | 2 | 0 |

674 2 3 456 13 3

VESTED FUND.

| | | | |
|--|---|---|---|
| Paid Commission to the Bank of Bengal for drawing Interest on the Govern- ment Securities, ... | 1 | 1 | 8 |
|--|---|---|---|

1 1 8 1 1 8

CUSTODY OF ORIENTAL WORKS.

| | | | |
|--|-----|----|---|
| Paid Salary of the Librarian, ... | 360 | 0 | 0 |
| Establishment, ... | 282 | 10 | 8 |
| Book Binding, ... | 47 | 0 | 0 |
| Fee paid to the Bank of Bengal for Stamping Charges, ... | 1 | 9 | 0 |
| Purchase of Stationery, ... | 54 | 8 | 0 |
| Ditto of Receipt Stamps, ... | 3 | 0 | 0 |
| Ditto of 20 Stone almirah bottoms, ... | 10 | 2 | 0 |
| Ditto of Dusters for Cleaning Books, ... | 6 | 0 | 0 |
| Ditto of 28 Almirah Locks for the Oriental Library Cases, ... | 63 | 0 | 0 |
| Salary for preparing Stock of the Bibliotheca Indica, ... | 105 | 6 | 3 |
| Petty Charges, ... | 50 | 1 | 6 |

983 5 5 869 15 9

LIBRARY.

| | | | |
|--------------------------------------|-----|----|---|
| Purchase of Books, ... | 136 | 12 | 0 |
| COPYING MSS. Copying Charges, ... | 33 | 12 | 0 |

33 12 0

ASIATIC SOCIETY OF BENGAL.

| | | | |
|---|-----|---|----|
| Refunded of the Loan received on the 31st August, 1867, ... | 4 | 6 | 11 |
| Paid by Transfer to Sale proceeds of Bibliotheca Indica through Messrs. Williams and Norgate, ... | 161 | 4 | 0 |

165 10 11

VAMAN ABRAJI MONOCK, Esq.

| | | | |
|--|-----|---|---|
| Paid by Transfer to the Bibliotheca Indica, ... | 120 | 0 | 0 |
|--|-----|---|---|

120 0 0

V. B. SOOBIAH, Esq.

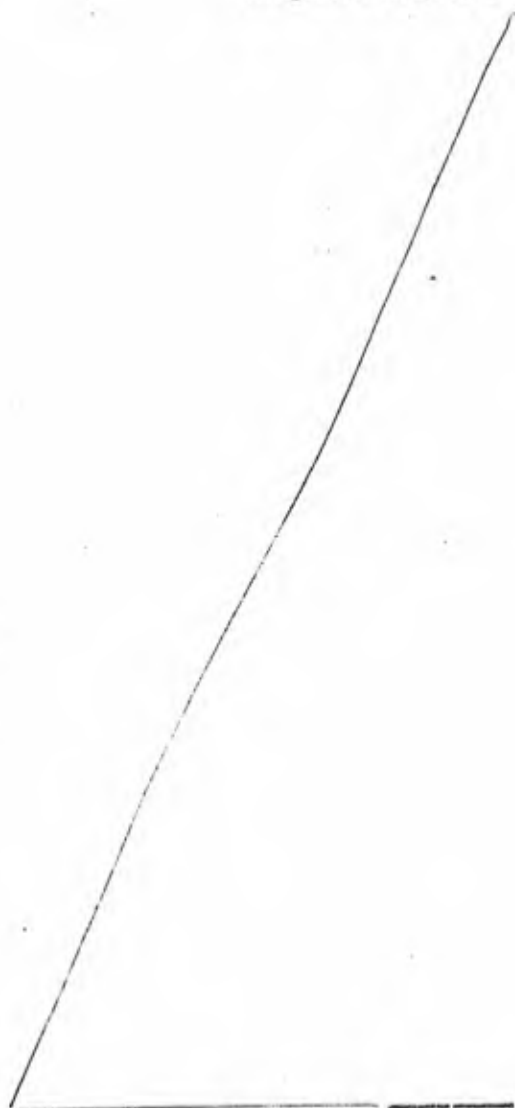
| | | | |
|--|---|---|---|
| Paid by Transfer to the Bibliotheca Indica, ... | 1 | 9 | 6 |
|--|---|---|---|

1 9 6

Carried over, Rs. 2,116 5 9

RECEIPTS.

Brought over Rs. 9,813 15 3



Carried over, Rs. 9,813 15 3

DISBURSEMENTS.

Brought over, Rs. 2,116 5 9

A. NARAIN ROW, Esq.

Paid by Transfer to the Bibliotheca

| | | | |
|----------------|---------|---------|--|
| Indica, | 20 12 0 | | |
| | <hr/> | 20 12 0 | |

DAMODARA JETHA, Esq.

Paid by Transfer to the Bibliotheca

| | | | |
|-----------------------------------|----------|----------|--|
| Indica, | 305 10 0 | | |
| Ditto Freight and Packing Charges | | | |
| &c., for sending ditto,... | 24 4 9 | | |
| | <hr/> | 329 14 9 | |

DR. C. BALLANTYNE.

Paid Packing Charges for sending

| | | | |
|----------------------------|--------|--------|--|
| Bibliotheca Indica, | 2 14 0 | | |
| | <hr/> | 2 14 0 | |

BABU BRAJABHUSHANA DASA.

Paid by Transfer to the Bibliotheca

| | | | |
|----------------|--------|--------|--|
| Indica, | 42 8 6 | | |
| | <hr/> | 42 8 6 | |

DAMAROO BULLABH, Esq.

Paid by Transfer to the Bibliotheca

| | | | |
|----------------|-------|-------|--|
| Indica, | 0 4 0 | | |
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BABU KALICUMARA MITRA.

Paid to Messrs. D'Rozario and Co., ...

| | | | |
|--|-------|-------|-------|
| | 1 9 0 | | |
| | <hr/> | 1 9 0 | 1 4 0 |

R. T. H. GRIFFITH, Esq.

Paid by Transfer to the Bibliotheca

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|----------------|--------|--------|-------|
| Indica, | 74 6 0 | | |
| | <hr/> | 74 6 0 | 3 0 0 |

TATTIRIYA ARANYAKA.

Editing and Printing Charges, ...

| | | | |
|--|---------|---------|---------|
| | 368 0 0 | | |
| | <hr/> | 368 0 0 | 365 0 0 |

TATTIRIYA BRAHMANA.

Editing and Printing Charges, ...

| | | | |
|--|---------|---------|---------|
| | 368 0 0 | | |
| | <hr/> | 368 0 0 | 368 0 0 |

ALAMGIR NAMAH.

Editing and Printing Charges, ...

| | | | |
|--|---------|---------|-----------|
| | 584 0 0 | | |
| | <hr/> | 584 0 0 | 2,634 4 6 |

SANKHYA SARA.

Printing Charges, ...

| | | | |
|--|----------|----------|--|
| | 251 10 0 | | |
| | <hr/> | 251 10 0 | |

SAHITYA DURPANA.

Printing Charges, ...

| | | | |
|--|---------|---------|--|
| | 779 8 0 | | |
| | <hr/> | 779 8 0 | |

ASWALAYANA GRIHYA SUTRAS.

Editing Charges, ...

| | | | |
|--|---------|---------|--------|
| | 100 0 0 | | |
| | <hr/> | 100 0 0 | 96 0 0 |

BADSHAH NAMAH.

Editing and Printing Charges, ...

| | | | |
|--|-----------|-----------|---------|
| | 3,796 0 0 | | |
| | <hr/> | 3,796 0 0 | 876 0 0 |

MIMANSA DARSANA.

Editing and Printing Charges, ...

| | | | |
|--|---------|---------|---------|
| | 333 0 0 | | |
| | <hr/> | 333 0 0 | 762 0 0 |

SANKARA DIGVIJAYA.

Printing Charges, ...

| | | | |
|--|--------|--------|--|
| | 80 0 0 | | |
| | <hr/> | 80 0 0 | |

Carried over, Rs. 9,248 12 0

RECEIPTS.

Brought over, Rs. 9,813 15 3

BABU SYAMACHARANA BANERJI.

| | | | |
|--------------------------|-----|-------|-------|
| Received on Deposit, ... | ... | 0 3 0 | |
| | | | 0 3 0 |

BALANCE OF 1866.

| | | | |
|----------------------------|-----|----------|---------|
| In the Bank of Bengal, ... | ... | 171 4 10 | |
| Cash in hand, ... | ... | 2 4 5 | |
| | | | 173 9 3 |

| | |
|------------|------------|
| Total, Rs. | 9,987 11 6 |
|------------|------------|

Examined,
Sd. PRATAPACHANDRA GHOSHIA,
Asst. Secy.
Asiatic Society, Bengal.

Errors and Omissions Excepted,
Sd. BUDDINATH BYSACK,
Cash Keeper,
Asiatic Society, Bengal.

Examined and found correct,
Sd. J. ANDERSON PAUL, }
„ H. BLOCHMANN, } *Auditors.*

DISBURSEMENTS.

Brought over, Rs. 9,248 12 0

AIN I AKBARI.

| | | | | | | | | |
|---|-----|-----|---|---|--|-----|-----|---|
| Paid Copying Charges, ... | ... | 71 | 0 | 0 | | | | |
| Ditto Salary to the Moonshee, ... | ... | 330 | 0 | 0 | | | | |
| Ditto Freight for sending Ain i Akbari, ... | ... | 25 | 0 | 0 | | | | |
| | | | | | | 426 | 0 | 0 |
| | | | | | | | 249 | 4 |
| | | | | | | | | 0 |

BALANCE.

| | | | | | | | | |
|----------------------------|-----|-----|----|---|--|-----|----|---|
| In the Bank of Bengal, ... | ... | 312 | 15 | 6 | | | | |
| Cash in hand, ... | ... | 0 | 0 | 0 | | | | |
| | | | | | | 312 | 15 | 6 |

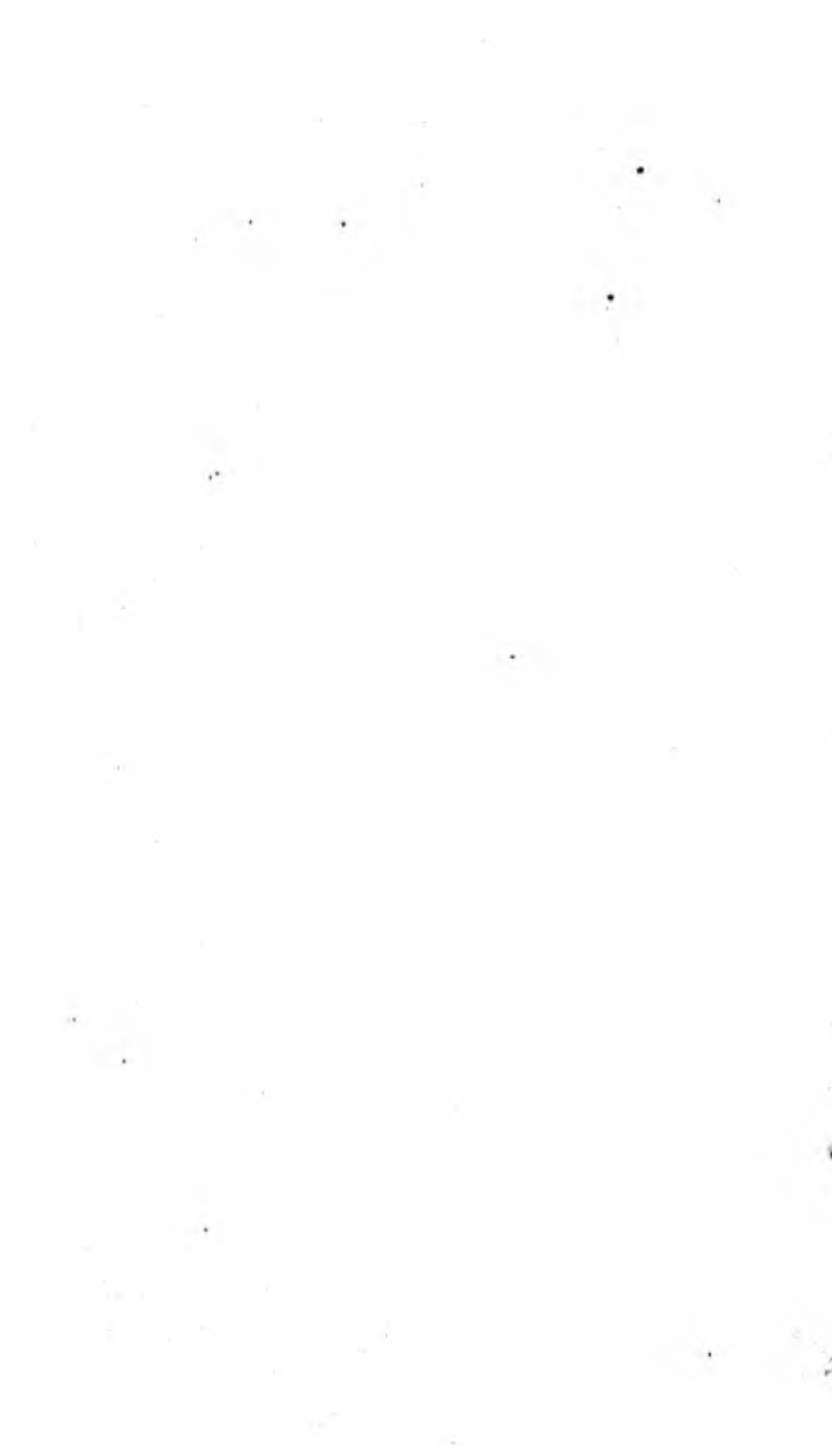
Rs. 9,987 11 6

Examined,
Sd. PRATAPACHANDRA GHOSHA,
Asst. Secy.
Asiatic Society, Bengal.

Errors and Omissions Excepted,
Sd. BUDDINATH BYRACK,
Cash Keeper,
Asiatic Society, Bengal.

Examined and found Correct,

(Sd.) J. ANDERSON PAUL, }
„ H. BLOCHMANN, } Auditors.



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR JANUARY, 1868.

The Annual General meeting of the Asiatic Society of Bengal was held on Wednesday the 15th January, 1868.

Dr. Fayer, President, in the chair.

The Secretary read the Council's report for the past year.

ANNUAL REPORT.

In reviewing the progress of the Society's affairs during the past year, the Council feel that they are justified in congratulating the Society on its present ameliorated position. The financial condition of the Society is, indeed, not yet so satisfactory as could be desired; but the heavy debts brought to the notice of the Society at the close of 1866, have been greatly reduced on the one hand; and on the other, strict economy and an income beyond what had been anticipated, have placed the Society in a position better than that which they held at the beginning of the year by not less than 4400 rupees. They feel that they may now express a confident hope that by continuing in a similar course of rigid economy for another year, they may be able to rescue the Society from debt, and to recommend a more liberal expenditure than they now feel justified in incurring, both on the Library and Publications.

The member list, which accompanies this report, shews a considerable increase on the previous year. The Society has lost 5 ordinary members by death, and 20 by resignation, making a total of 25; while not fewer than 54 new members have joined the Society, making a net increase of 29. The paying members have increased by 14, the

absent by 15. Two members whose names had been struck off from the list by mistake, have been re-instated at their own desire.

The following comparative numerical abstract of the member list for the last 10 years affords a convincing proof of the steady increase in the prosperity of the Society.

| | Paying. | Absent. | Total. |
|------------|---------|---------|--------|
| 1858,..... | 193 | 40 | 233 |
| 1859,..... | 185 | 45 | 180 |
| 1860,..... | 195 | 47 | 242 |
| 1861,..... | 225 | 55 | 281 |
| 1862,..... | 229 | 82 | 311 |
| 1863,..... | 276 | 79 | 355 |
| 1864,..... | 288 | 92 | 380 |
| 1865,..... | 267 | 109 | 376 |
| 1866,..... | 293 | 94 | 387 |
| 1867,..... | 307 | 109 | 416 |

Of the Ordinary members of the Society, the Council have to regret the decease of General Sir J. B. Hearsay, Captain A. R. Fuller, Director of Public Instruction in the Panjab; Lieutenant-Colonel Short of the Bengal Engineers; the Honorable Pandit Shanibhunatha, the first native of this country who has ever occupied the exalted position of Judge of the High Court of Bengal; and Babu Jadavakrishna Singha, for some years an active member of the Society, as Vice-President, and as a member of its Council, and of the Philological Committee.

Of the Honorary members, two eminent names are on the obituary of last year; two others must also be noticed, which should have appeared on that of 1866, had the Council been apprised of the loss when preparing their Annual report.

M. Reinaud, a member of the Imperial Institute of France, and Professor of Arabic, was for 26 years an Honorary member of the Society. He was elected in 1840, in recognition of his eminence as an Oriental scholar, in which capacity he was at one time well-known to the Philological members of the Society. He died in the beginning of 1866 at an advanced age.

Colonel Sir G. Everest, whose decease was announced by the Presi-

dent in his address of last year, is too well-known as the former head of the Great Trigonometrical Survey of India, to need more than the mention of his name; a name which will go down to future times associated with the loftiest known peak in India and the world.

The decease of Rajah Sir Radhakanta Deva, one of the most eminent men that Bengal has produced, was announced to the Society at the meeting in May, on which occasion, Babu Rajendralala Mitra addressed to the Society a well merited and interesting eulogium on his distinguished and most useful life.

Professor Francis Bopp, perhaps more than any living man, contributed to lay the foundation of the modern Science of Comparative Philology. His Comparative Grammar published in 1845, is the noblest monument of his life.

MUSEUM.

The management of the Museum has been in the hands of the Trustees appointed under Act XVII. of 1866, since the 1st May 1866. The formal transfer of the Society's Collections has not yet taken place, as the lists required by section 13 of the Act are not yet completed. This work has been undertaken by Dr. J. Anderson, Natural History Secretary to the Society, and a portion of the lists are now in the hands of the Council. Provision has been made in the Budget for the ensuing year for carrying on this work, which the Council hope will be completed before the expiration of the year.

FINANCE.

It will be remembered that, owing to the heavy expenditure on the Museum and building repairs in 1865 and 1866, the state of the Society's finances at the commencement of the past year was such as to demand the urgent attention of the Council. As ascertained at the time of preparing the report, the liabilities of the Society amounted to Rs. 7,500; but this amount was found on further enquiry to be considerably below the truth, and the statement of Assets and Liabilities published in the Proceedings in August last, shewed that they amounted to not less than Rs. 9,072-3-4.* Against this, the Society's Cash Assets were Rs. 2,898-5-2 and outstandings to the amount of Rs. 8,136-

* One item of Rs. 735-0-0, viz. Subscription to Oriental Translation Fund, has been struck off by order of the Finance Committee, thus reducing the liabilities at the end of 1866 to Rs. 8,337-3-4.

3-2. The Cash Assets and outstandings therefore exceeded the liabilities by Rs. 1,957-5-0 only, even assuming, (what is certainly not the case,) that the whole of the outstandings could be realized.

Accordingly, active measures were taken to diminish the expenditure of the Society. A Budget statement was prepared, based on the income and expenditure of previous years, and it was decided that a certain proportion of the sum allotted to each item should be set apart to diminish the liabilities incurred for that item in previous years. The Financial Committee were entrusted with entire control over the expenditure, and strict injunctions were issued, that the expenditure on each item should not exceed the Budget estimate, except on urgent grounds and with the special sanction of the Council, on the report of the Finance Committee.

The result of these measures is shewn by the following comparative statement of actual income and expenditure as compared with the estimates. It will be seen that while the income of the year has exceeded the estimates by Rs. 2,358, the expenditure has been in excess by Rs. 510 only, and that there is a net saving of Rs. 1848.

A large portion of the expenditure has moreover been applied to the reduction of debt, so that the Cash assets are now Rs. 5,526-4-5 and the outstandings Rs. 9,071-10-8; while the liabilities are Rs. 7,451 11-10 only. A portion of the Cash assets will be at once devoted to a further reduction of the liabilities.

| | INCOME. | | | |
|-------------------------|-----------------------------|---------|----------|---------|
| | Estimate. | Actual. | Deficit. | Excess. |
| Admission Fees,..... | 1000 | 1504 | „ | 504 |
| Subscriptions, | 8600 | 8372 | 228 | „ |
| Journal, | 900 | 2820 | „ | 1920 |
| Library, | 200 | 437 | „ | 237 |
| Secretary's Office, ... | 20 | 17 | 3 | „ |
| Coin Fund,..... | 80 | 8 | 72 | „ |
| | 10,800 | 18,158 | 303 | 2,661 |
| | Deduct Deficit, | | | 303 |
| | Gross excess of income, ... | | | 2,358 |

| EXPENDITURE. | | | | |
|-----------------------------|-----------|---------|---------|---------|
| | Estimate. | Actual. | Saving. | Excess. |
| Journal, | 5000 | 4349 | 651 | " |
| Library, | 2150 | 3195 | " | 1045 |
| Secretary's Office, ... | 2000 | 1633 | 367 | " |
| Building, | 1000 | 653 | 347 | " |
| Coin Fund, | 300 | 417 | " | 117 |
| Miscellaneous, | 350 | 309 | 41 | " |
| Museum Catalogue, . | " | 754 | " | 754 |
| | 10,800 | 11,300 | 1,406 | 1,916 |
| Expenditure excess, | | | | 510 |
| Income | Do., | | | 2,358 |
| Net excess of income, | | | | 1,848 |

To complete this comparative review of the financial position of the Society, the statement of assets and liabilities may be given as follows, omitting fractional sums,—

| | Cash Assets. | Outstanding. | Gross Assets. | Liabilities. |
|-------------|--------------|--------------|---------------|--------------|
| 1866, | 2893 | 8136 | 11029 | 8337 |
| 1867, | 5526 | 9071 | 14597 | 7451 |

The Council believe that this statement fully justifies the expectations expressed in their report of last year, that with economy and careful management, the Society's Finances will be restored to their former prosperity long before the removal of the Society to the new museum building.

In framing their Budget for the coming year, they are, however, mindful that this object is not yet attained, and that economy will be no less necessary in the coming than in the past year. The income has been estimated on the basis of an average of the last five years, and the expenditure as far as possible also, and, as in the last year, a certain margin will be allowed on the larger items for reducing the actual liabilities. Any excess of income over the estimate will be devoted to the same purpose.

INCOME.

| | |
|---------------------------|--------|
| Admission Fees, | 1200 |
| Subscriptions, | 8400 |
| Journal, | 1000 |
| Library, | 350 |
| Secretary's Office, | 25 |
| Coin Fund, | 25 |
| | <hr/> |
| | 11,000 |
| | <hr/> |

EXPENDITURE.

| | |
|---------------------------|--------|
| Journal, | 5000 |
| Library, | 2150 |
| Secretary's Office, | 2000 |
| Building, | 1000 |
| Coin Fund, | 300 |
| Miscellaneous, | 350 |
| Museum Catalogues, | 200 |
| | <hr/> |
| | 11,000 |
| | <hr/> |

OFFICERS.

The executive officers of the past year have been the same as in the previous year, except that during the absence of the General Secretary and the Treasurer, each for six months, Mr. Ormsby and Mr. H. B. Medlicott took charge of their offices respectively, relinquishing them on the return of their former holders in November. Dr. J. Anderson, the Natural History Secretary has quite recently left Calcutta to accompany the expedition to Yunan, and his office has been kindly undertaken by Dr. Colles, who has been elected to Dr. Anderson's place in the Council.

Babu Protapchunder Ghoshe, has continued to give entire satisfaction as Assistant Secretary and Librarian. He has recently been granted two months leave, to enable him to prepare for the University Examination. During this period, Babu Tarinichurn Ghoshe has been appointed to officiate.

JOURNAL.

The volume for 1867 will be less bulky than that of the previous year, each part consisting of three Nos. only, six in all, of which four are already issued.

The fourth Number of the Literary and Archæological part of the Journal for 1866, did not appear until July in the past year, and the 3rd Number of the Natural History Section for 1866 was published in February 1867. This publication of the Journal so long after its nominal date, has been due to unavoidable delays, and not to any want of activity on the part of the Editors, who have done their utmost to hasten the publication. No confusion as to priority of authorship or publication can arise on this account, because each paper is headed with the date of its authorship and receipt, and the table of contents of the volume shews the date on which each part is published. But the anomaly is undoubtedly objectionable, and endeavours will be made in future, to publish the whole yearly Volume as nearly as possible within the year.

The Council believe that in point of interest, the volume for the present year will bear comparison with that of any previous year. There are doubtless several points in which the Journal is still susceptible of improvement, but the Council have given, and still continue to give their best endeavours to raise its scientific status, and by thus making it a worthy channel for the writings of the best men in the country, they trust to gain for its Natural Science Section as high a character among the corresponding Scientific Societies of the West, as was long since gained for the Journal in its original form among Archæologists and Philologists.

Ten numbers of the Proceedings of the Society have been published during the past year.

LIBRARY.

The state of the Society's Finances has not allowed of any steps being taken towards the publication of the Catalogue, the MSS. of which was prepared in 1866. If, however, the improvement in the Society's resources during the ensuing year should be such as to justify the Council in incurring any expenditure beyond that provided in the Budget, this Catalogue will have a prior claim on their attention. 692 works and parts of works have been added to the Library during the past year.

COIN CABINET.

A large number of coins has been purchased during the past year, including a batch of 143 silver, 11 gold, and 600 copper coins from the Bank of Bengal, and several small batches from dealers. Among the silver coins are specimens of Bactrian, Parthian, Indo-Seythian and Pathan currencies, and some Indo-Greek and Mogal coins. A copper Archabæus and a few gems may be noticed as rare. No progress, however, has yet been made in arranging and cataloguing the contents of the Society's cabinets. It is hoped the Coin Committee will take this subject into their serious consideration, and supply the desiderata in course of the current year.

BIBLIOTHECA INDICA.

The Persian series of the Bibliotheca Indica has been carried on with great energy and activity, and no less than eighteen fasciculi have been published, including portions of three different historical works of great value.

Under the able superintendence of Mr. Blochmann, five fasciculi have been issued of the new edition of the *Ain i Akbari*. The text of this important statistical account of the Empire of Akbar has been prepared after a careful collation of ten different MSS. some of which are very old and remarkably accurate. The way in which it is being carried through the press, reflects much credit on the editor. The Council confidently expect that the work will be in every way worthy of the special patronage which has been extended to it by Government.

Maulavis Kabîr-ul-Din Ahmad and Abdul Rahîm have been busily engaged with their edition of Abdul Hamîd's history of the reign of the Emperor Shâh Jehan, and have issued over 1,200 pages in the course of the year under report. Among the MSS. in use for collating the text of this work is a volume of rare accuracy and authenticity. It belonged at one time to the Imperial Library and bears an autograph of Shah Jehan himself. For the reign of his successor Aurangzeb, Maulavi Khâdam Hossein and Abdal Hae have issued two fasciculi of the *Alamgîrnâmeh* of Muhammad Khâzim. Both these works, it is expected, will be completed within the current year.

The progress of the Sanskrit series has been very much retarded

by the protracted illness and subsequent death of Paṇḍita Rāmanārāyana Vidyaratna, who had charge of three different works. Two of them viz. the Saṁhitā of the Black Yajur Veda, and the commentary on Kāmandaki's "Elements of Polity" have since been made over to Professor Mahes'achandra Nyāyaratna of the Calcutta Sanskrit College, and the third, the *Gr'ihya sūtra* of Āswalāyana to the learned minister of the Brahma Sabhā, Pāṇḍit Anandachandra Vedāntavāgisa, who are carrying them on with diligence. .

Of the Black Yajur Brāhmana, Bābu Rājendralāla Mitra has published the 22nd fasciculus, bringing to a close the third volume. The English Index is now all that remains in the press for the completion of this work. The Bābu's edition of the Āraṇyaka of that Veda is also in a forward state.

A new work of considerable interest has just been completed by Dr. F. Mason of Tounghoo: it is a Grammar of the Pāli language in English. For a thorough study of the Burmese language, as well as for a knowledge of the Pāli as current in Burmah, this work will be found of great use to the oriental scholar. It takes up two fasciculi of the Bibliotheca Indica.

The following is a list of the several works published during the past year in the old and the new series.

NEW SERIES.

The Mimāṃsā Darsāna with the commentary of Sāvara Svāmin, edited by Paṇḍita Mahes'achandra Nyāyaratna, No. 115, Fasc. V.

The Pāli Grammar, edited by the Rev. F. Mason, Nos. 123, 124, Fasc. I, II.

The Taittirīya Āraṇyaka of the Black Yajur Veda with the commentary of Sāyanāchārya edited by Rājendralāla Mitra, Esq., No. 130, Fasc. V.

The Ālangirnāmeḥ by Muhammad Kazim ibn-i-Muhammad Amin Munshi, edited by Mawlawis Khādīm Hussain and Abdul Hai, No. 106, 109, Fasc. X, XI.

The Bādshāhnameḥ by Abdal Hamīd Lāhawri, edited by Mawlawis Kabīr ul-Dīn Ahmad and Abdul Rahīm, Nos. 106, 107, 108, 110, 111, 114, 116, 117, 118, 121, 125, 126, 127, 128, Fasc. III. to XVI.

The Ain i Akbari by Abul Fazl i Mubārīk i Allāmi, edited by H.

Blochmann, M. A. Nos. 112, 113, 119, 120, 122, Fasc. I, II, III, IV, V.

OLD SERIES.

The Taittirīya Brahmana of the Black Yajur Veda, with the commentary of Sāyanācharya, edited by Bābu Rājendralāla Mitra, No. 220, Fasc. XXII.

It was proposed by Mr. Locke and seconded by Mr. Waldie, that the report be adopted.

The proposition was put to the vote and carried unanimously.

The meeting then proceeded to elect the Council and officers for the ensuing year.

It was proposed by the President and agreed to, that Dr. Stoliczka and Dr. Waldie be appointed Scrutineers of the ballot.

The ballot having been taken, the President announced, on the report of the Scrutineers, that the following gentlemen had been elected to serve as officers and members of the Council for the ensuing year.

Dr. T. Oldham,..... *President.*

| | |
|----------------------------------|---------------------------|
| The Hon'ble J. B. Phear, | } <i>Vice-Presidents.</i> |
| A. Grote, Esq., | |
| Kumār Harendrakrishna Bahádúr, } | |

Dr. T. Anderson.

E. C. Bayley, Esq.

Dr. J. Ewart.

Dr. J. Fayrer.

Bābu Debendra Mallik.

The Hon'ble J. P. Norman.

Dr. S. B. Partridge.

Col. J. E. Gastrell, *Treasurer.*

Dr. J. A. P. Colles, *Natural History Secy.*

H. F. Blanford, Esq., *General Secretary.*

Rājendralāla Mitra, Esq. *Philological Secretary.*

It was proposed by the President and seconded by Dr. Stoliczka that Mr. Paul and Mr. Blochmann be appointed auditors of the accounts for the past year. Unanimously carried.

The President then addressed the meeting before vacating the chair.

PRESIDENT'S ADDRESS.

GENTLEMEN,—While I yet have the privilege of being President of this Society, and before resigning the chair to my successor, I will, with your permission, briefly review our proceedings during the past year. I would not weary you with details, but I think it well that the inauguration of a new year in the Society's history should be noted by a retrospect on the part of the retiring President, of the events which have rendered his period of office interesting, and by an outline of the actual condition in which he makes over to his successor the responsible office with which he has been entrusted. At the last annual Meeting, I alluded to the approaching transfer of the Society's collections to the Indian Museum. That transfer has now been almost virtually (though not formally) completed, and the Society may congratulate itself on being relieved of the charge of treasures which it was no longer in a position to maintain as they merited. We still retain our interest in these collections, and are largely represented in the Board of Trustees of the Museum in which they are deposited, and we have the satisfaction of knowing that they have passed under the immediate care of a Naturalist who will do them full justice, render them of service in the interests of science, and add to the nucleus we have placed in his possession.

The past year, though unmarked by any striking occurrence, has not been altogether an uneventful one. Progress has been made and activity has been predominant, as I think is apparent from the different subjects that have engaged the Society's attention.

I have always considered that the Asiatic Society should be regarded from that catholic point of view, which its founder contemplated, when he said: "It will flourish if Naturalists, Chemists, Antiquarians, Philologists and men of Science, in different parts of Asia, will commit their observations to writing, and send them to the Asiatic Society at Calcutta; it will languish if such communications shall be long interrupted, and it will die away, if they should entirely cease." I am glad to think that during the past year, the spirit of Sir W. Jones'

utterance has been remembered, and that subjects of varied interest have been discussed. Without in the least attributing it to other than unavoidable causes, I have long felt that Physical Science has hardly taken that place in the business of the Society that was contemplated by its founder; and it has consequently been my desire, as far as my influence could affect the question, to see a more equal adjustment of its claims. In no degree undervaluing the importance of Philological and Antiquarian research, I have been glad to see that subjects connected with Natural Science have more equally shared with them, the attention of the members at the monthly meetings; and I trust that such will continue to be the case.

During the past year, many subjects of interest have occupied our attention, and been freely discussed at the monthly ordinary meetings. At that of January, the extraordinary shower of Meteors that occurred on the 14th November, 1866, was noticed by Mr. Masters in Kishnaghur, and his letter to our Secretary, read before the meeting, gave an interesting and accurate account of that remarkable and brilliant display of meteoric phenomena. In a subsequent letter, Mr. Masters, called attention to a second shower of Meteorites on the 12th of December, 1866. This he says was not brilliant or exciting, but worthy of being recorded.

On the same occasion a fragment of a meteorite which had recently fallen in the north of Hungary was presented by Dr. Duka, who described the phenomena attending its fall; its appearance in the air like a ball of fire; the detonation like the simultaneous discharge of a hundred pieces of artillery, with which it split into fragments, the smallest of which weighed a few ounces, the largest many pounds; the rushing sound with which it approached the earth; and the sulphurous garlic-like odour communicated to the air in its vicinity; as also the portentous awe with which it was regarded by the people in reference to the Austrian Campaign, then about to commence, were described.

At the February meeting, a specimen of new Arabic printing by Mr. Ferette of Damascus, was brought before the Society: it appeared to afford some advantages in a typographical point of view and to have met with the approval of those competent to give judgment on such matters. A paper was then read by the Secretary, from Mr. Thomas, a well

known oriental scholar and Palæographer, on the derivation of the Arian Alphabet, in which his object was to shew that the Sanskrit Alphabet was of Dravidian origin, having been adopted by the Arian invaders from the subjugated Dravidians. The combination and nature of certain letters was adduced in support of this theory; but it was opposed, in the discussion that followed, by Babu Rajendra-lala Mittra, who considered that the Dravidian races were far too low in the scale of human advancement to have furnished an alphabet to the more enlightened Arians who had overrun their country. He maintained that the Arian races did not all set forth at one period from their original abode in Central Asia, but that at different stages of their development, they started on their migrations, and that they probably originated the system of alphabetic writing themselves; and that indeed it was only too probable that no Dravidian writing existed at that period at all. The Babu said that Mr. Thomas assumed that the Brahmanic Arians first constructed an Alphabet in the Arian provinces out of an Archaic type of Phœneecian, which they continued to use till they discovered the superior fitness and capabilities of the local Pali; but this is doubtful, and even the Pali is a vernacular form of Sanscrit, the first stage in its transition into Prakrit; and the Alphabet used to write it down may more reasonably be taken to be its legitimate vehicle, and not that of the Dravidian, of which no inscription either old or new has yet been discovered in the Pali character. Indeed he could see no connexion whatever between the Dravidian languages and the Pali character, nor did he think that the use of cerebral letters, another argument brought forward in favour of the Tanulean origin of the Sanscrit, was tenable. The Babu finished a long and learned commentary on Mr. Thomas' paper, in which, though he dissented from his propositions, he paid a compliment to the author's learning. Further remarks by other members of the Society especially by Mr. E. C. Bayley followed, in which the argument for and against Mr. Thomas' views were discussed; and after much valuable information had thus been communicated, a paper from Col. Playre, was read on some points of interest in the Môn or Talain language of Burma. Upon this, Mr. G. Campbell made some remarks, which tended to shew that he agreed with Col. Dalton, in that some of the dark tribes of the extreme East of India have probably an affinity to the aborigi-

nal rites of Central India; and that the study of these South-Eastern tribes and their connexion with those of the West opened up a boundless field of most interesting enquiry.

Some remarks were then made on a letter from Professor Piazzzi Smyth on the subject of procuring a small block of stone of a peculiar kind from India. It should be of supereminent hardness, fineness of grain, toughness, freedom from fissures and crystallization, and proof against the entrance of water. Its purpose being to form small standard scales of 5 to 10 inches in length, likely to last unaltered in length and quality for a much longer time than the metals hitherto used for the purpose. Something was required capable of going down to all posterity without sensible change during 5000 to 10,000 years.

In commenting on this, the Secretary suggested that, perhaps the Jasper or the Jade of the Soane and Nerbudda valleys might fulfil all the purposes required.

At the March meeting, Professor C. N. Macnamara read a paper on the intimate structure of muscular fibre; a subject of great histological and physiological interest. Mr. Macnamara with the aid of a very powerful lens, (one-fiftieth of an inch object glass) has investigated the minute structure of this remarkable tissue, and has arrived at conclusions which differ somewhat from those of other histologists. He stated his belief that the contractile homogenous substance which gives a muscle its peculiar properties, is arranged, in voluntary and involuntary muscle, so as best to fulfil the mechanical purposes for which it is intended. He does not consider that in voluntary muscles there are such elements as those termed sarcofibrils, but that they are composed of longitudinal and transverse bands of contractile tissue, peculiarly arranged: diagrams illustrative of this arrangement were exhibited. He further stated his impression that such being the structure of muscle, it displays a source from which animal heat may be derived: much of Liebig's theory of heat from combustion and tissue-change thereby falling to the ground: that in muscular action there is evidence of force as capable of developing heat, as is combustion, and that electrical phenomena attendant on certain muscular movements, may thereby be accounted for, independent of nervous action: that it is a question indeed, of conversion of forces. Considerable discussion especially on

the thermal question, arose out of this thoughtful and interesting paper. The subject of it is still under Professor Macnamara's investigation.

At the April meeting, Mr. Waldie, an eminent Operative Chemist, revived a subject that had previously occupied the Society's attention—the composition of the Hooghly water. The paper described to the actual composition and impurities, not only of the water generally, but also of that taken at different parts of the river, below, opposite and above the city, and again at different stages of the Tide. This especially in reference to the great and important question of a water supply for the city. Considerable discussion followed, with the result of throwing much light on the bearings of this important subject.

At the May meeting, Babu Gourdash Bysack read an interesting account of the antiquities of Bagerhaut in the Jessore district, 450 years ago, the seat of a Collectorate under the Mahomedan government. It was presided over by one Khan Jehan, a Pathan of distinction; he enriched the place by constructing many noble buildings and stately edifices, of which now only a mosque and a tomb remain. Besides the tomb of a Mahomedan Pir, who made himself famous by out-casting certain Brahmaus, whose descendants retain to this day, in consequence, the name of Pir Allies. There are a tank full of tame crocodiles, supposed to possess many and extraordinary virtues and powers—a mosque, remarkable for having sixty domes; and a peculiar acoustic phenomenon of a series of sounds which are heard at this place, and loudest *after* storms and during calms, attributed by some to the distant sea breaking on the shore, but by the Babu and others, to some subterranean cause.

Mr. Hill, Professor of Engineering in the Presidency College, then read a most interesting paper, which he illustrated by drawings, of a new form of steam engine, whose merits consist in the great economy of fuel and power, not less than in the simplicity of its construction. In the course of his description, he compared it with other forms of engines, pointed out its superiority, and contrasted the relative expenditure of fuel and force in each. An interesting discussion followed, on subjects connected with steam power and machinery generally, and

Mr. Hill was good enough to promise a further communication on the subject.

At the June meeting, which I was unfortunately prevented by professional duties from attending, a paper by Mr. E. B. Cowell was read, on the Toles of Nuddea; being a description of them, as they were observed by the author in 1864. Tole (টোল) is described by Mr. Cowell to be a Bengali word of uncertain derivation. It means or represents a state of feeling in ancient India, similar to that which obtained in ancient Greece, viz., the popular prejudice against receiving mercenary reward for the communication of knowledge. The Pandit of a Tole should not only instruct, but he should feed and lodge his pupils for nothing; and such is the case with the Pandits of many Toles; though, in Nuddea, they have broken through the system, and now only supply lodging for nothing. The nature of the studies, Nyaya and Smriti, was also described, and information on the Hindu Systems of Philosophy and Logic and their mode of teaching followed. The various Toles and their students are mentioned, as also the pundits learned in these abstruse subjects. The peculiarities of the scholastic training are described—and the errors of the form of Hindu Logic, which is so fatally bound up with technical terms, that it inevitably degenerates into a mere playing with words, is described as being exaggerated to its height in the Nuddea school, and specimens are given from actual discussions held before Mr. Cowell of the nature of these logical quibblings.

Mr. Cowell says, that one of the things which most struck him was, the desire for English education evinced by them all. These Toles in Nuddea it appears, receive a pension from Government of Rs. 1200 a year. Mr. Cowell concluded his report by a recommendation that some superintendence of the Sanscrit studies in these Toles should be exercised, that examinations should be held, and rewards granted to the deserving.

This paper was followed by a report by Mr. McClintock, the American Vice-Consul at Bradford, on the manufacture of Chinese grass, and he solicits information from Consular officers in China, especially from Hankow, which is the chief market for the grass.

Babu Protapchunder Ghoshe then read an interesting paper on the Hindu Calendar, in which he informed the Society that the Hindoo

civil year is a practical modification of the Hindoo astronomical year.

The proceedings of the meeting were closed by reading a letter from Major Strutt, giving a description of a Greek coin of Sophytus, which had been purchased in the Peshawur district, with other coins of the Bactrian series: also a gold Diodorus and a Bucephalus in excellent preservation.

At the July meeting, a paper was read by Mr. Ball of the Geological Survey, on the Jungle products used as articles of food by the inhabitants of the district of Manbhoom and Hazareebagh; a subject of peculiar interest at the time when so large a number of human beings were perishing from want of grain. Mr. Ball described the products under six headings, viz.—fruit, seed, flowers, leaves and stems, roots and fungi. Specimens of all were laid on the table, with a Botanical description of each. It appears from Mr. Ball's paper that a number of the people of the aboriginal tribes, such as the Santhals and Coles, as well as the poorer classes of Hindus, depend solely on the Jungle to supply them with food, for two or three months in the year. Some useful information was then communicated by the author, in reply to various questions put by the meeting.

A paper was then read by the Secretary from Mr. Amery, Superintendent of arboriculture at Lahore, on the origin of races; in which he stated his impression that the human race consisted of a *genus* comprising several well marked species, some of the particular characters of which are illustrated in the physical and mental characters of the Australian, the American, the Indian, the Negro, the Mongol and the Caucasian. That the different types of men occupy areas corresponding to the different Geological and Botanical provinces, and that it is improbable (Mr. Amery thinks) that they are parts of the same original creations. He thinks that it is a remarkable coincidence that the race peopling even geologically newer regions, is higher in the scale, than the race of the next older region. Mr. Amery deduces from the study of this subject, that different types of men are separated by wide differences, and that every argument, which has been advanced in support of the unity of the race, will be found, if tested critically, a vain effort to reconcile facts with pre-conceived theories; also that different capacities are

inherent in different races, as are difference of colour and other peculiarities. This he illustrates by saying that colour is shewn to be quite independent of climate: the black Negro and the yellow Mongol maintaining the same complexion in tropical, temperate and even arctic climates; the mental faculties of different races being equally marked, and having always been so: that the child of a Yorkshire peasant can be made by education equal to the most learned in the land, whilst the child of an Australian is only capable of learning to a certain point: and hence that certain races, like the Caucasian are capable of civilization, while others like the Red Indian and Tasmanian are not. The paper though propounding no original or extraordinary theory, excited considerable discussion among the members, the subject being one, at present, of much interest in the scientific world.

Mr. W. T. Blanford took exception to the author's views, and pointed out, that in many respects they were not such as were received by ethnologists; he thought that Mr. Darwin in his chapters on geographic distribution in this work on the origin of species, had satisfactorily explained most of the phenomena alluded to in Mr. Amery's paper. This was followed by a most interesting description by Mr. W. Blanford of much of the Fauna of Central India, in which the question of the varieties of the Bengal tiger, the lion of Central India, various bovine and cervine animals, as well as antelopes and birds, were discussed, and many interesting facts in the natural history of these creatures were narrated by the author, who has made Indian Zoology a special subject of study, and who is not merely a closet naturalist, but one who has studied the habits of the animals in a state of nature. We are glad to think that these qualifications are now being applied for the benefit of science with the Expeditionary Force in Abyssinia.

At the August meeting, a paper by Dr. S. B. Davis on the Ethnology of India was read, and as the author premised, it was no new subject, but yet one of great interest, and in the present day attracting considerable attention. Dr. Davis did not propound any new view or theory, but rather insisted on the value of the study of Craniology as a much more reliable basis for the study of Ethnology, than Philology possibly can be; and he objected to the affinities of the European

and Hindoo races being decided alone by the structure of language. The paper induced considerable discussion, and had the advantage therefore, if not in itself original or new, of doing what appears to me so desirable when important questions of a scientific nature are before the world, of directing the attention and of keeping it fixed on the object, as also of eliciting what new views men have actually arrived at, in connection with the points at issue.

A paper was then read by the Secretary, from M. Emil von Schlagintweit, upon peculiarities of the languages of the aborigines of India and Thibet, and their analogies, and also on their physical peculiarities; with remarks upon the facial characteristics, which elicited some discussion on the subject from Dr. J. Anderson and Mr. W. T. Blanford. Some valuable hints on the mode of making casts of the head were given by Dr. Anderson, who remarked that, by this process, he hoped, in time, to have life busts of all accessible Indian Races. A memorandum was then read by Professor Partridge, Honorary Secretary to the Falconer Memorial Committee, in which he stated that there still remained a debt of Rs. 110 for the marble bust of the late Dr. Falconer and he therefore appealed to the members for additional subscription; not only to defray this debt, but to provide a suitable pedestal for the bust, which was there for the Society's inspection.

At the September meeting, Mr. W. T. Blanford read an interesting account of the stone implements that have been found in India, the result of his own observation and of communications from other investigators. To this interesting collection of the vestiges of prehistoric man, the Central Provinces, Central India, Madras, Bengal proper, Bombay, Scinde, Assam, Burma, Java and the Andaman Islands contributed, and a tabulated account of the specimens found in each of these localities was laid before the meeting, describing their nature, the exact locality and position in which they were found, the name of the discoverer, and mentioning the Museum or other site in which they are deposited, with remarks illustrative of each specimen. Several members of the Society made remarks on these stone implements; and an interesting discussion followed on them, as found not only in India, but also in other parts of the world. Mr. Blanford said that he was inclined to believe that we have, in them,

evidence in India of the existence of man at a much earlier period than in Europe; but that the subject has not attracted, among scientific men, the attention it deserves. There is evidence of the co-existence of men with the animals whose fossil bones are found in the Godavery gravels; and that this indicates a great antiquity; for the fauna of the Nerbudda gravels (which is identical with that of the Godavery,) indicates the presence of animals of Western (African and European) affinities, which have since, in long periods of time, been substituted by creatures of Malayan affinities. The great Bovine of the Nerbudda gravels, an animal, the remains of which are peculiarly abundant, was a true Taurine, so closely allied to the great *Bos primigenius* of Europe, (the *Bos Urus*) that the differences are scarcely more than sufficient to constitute geographical races. But as is well-known, the only indigenous race of wild Bovines, (exclusive of the Buffalo,) in the Indian Peninsula, the Gaur, is a flat horned Taurine belonging to the sub-genus *Gavæus* or *Bibos*, widely different in structure from the true round horned Taurines; and both the Gaur, and other species of the same sub-genus are unknown north and west of India, in the countries inhabited by the modified domestic descendants of the *Bos primigenius*, but abound throughout the Malay Peninsula and in several islands in the Malayan Archipelago. This, as Mr. Blanford pointed out, is a case of complete substitution of one animal by another, and he knows of no case of substitution having taken place since the pleistocene period. Species have died out, just as the Hexaprotodont and Tetraprotodont Hippopotami of the Nerbudda have become extinct in India, but that is all. It seems to indicate a longer interval in India since the deposition of the Nerbudda gravels, than has taken place in Europe since the formation of those pleistocene beds in which the oldest remains yet discovered, are found. The antiquity is therefore doubtless great, and the suggestion is one worthy of the attention of Palæontologists.

Some discussion followed on the antiquity, uses and varieties of these implements; and some glass flakes, recently brought from the Andaman islands, and resembling those of obsidian found in Mexico when first the Europeans landed there, were exhibited, and excited much interest; as serving to connect the past with actually existing races of men, whose debased condition contrasts as strongly with

that of the civilized races; as it is suggestive of what may have been the condition of those earlier races of men who used similar implements.

At the November meeting, Captain Anderson of the Bengal Army exhibited two Andamanese lads of about 10 years age, whose education he had undertaken. Captain Anderson said he had found them apt at learning the names of things and in acquiring a parrot-like imitation of sounds; and that they had a peculiar desire and fondness for dress. The boys were made to sing a native song, and perform a native dance. They are sharp bright little fellows, true Melanesians or Negritoes, and albeit they are considered to be among the lowest of the human race, have all the quickness and vivacity, with apparently much of the intelligence, of races more advanced in civilization than they are. It has been said that they are cannibals, but without sufficient grounds, and I believe that those who know them best, consider that there is no foundation for this report. They have very much the aspect of the African Negro: the blackness of skin and crisp curliness of hair are not to be surpassed. Indeed some Ethnologists regard them as the descendants of Africans, who have been wrecked on the islands and have degenerated thus low in the scale.

But again it is said by others that in neither skull nor teeth do they present the true African characteristics, and that they are not more prognathous than other Asiatic tribes. Dr. Latham represents their language as being connected by a link with the monosyllabic tongue of the Burmese. As is the case with most other of the lower types of the human race, the introduction of European civilization and habits is of questionable advantage, for with the good, so much of the evil is learned, that their ultimate extinction is more probable than their advancement among the other races of men. Disease and alcohol have found them out, and it is to be feared that, like the Caribs of the Antilles, their end is not far off.

An important communication was then made by the Chairman, Professor Partridge, who drew the attention of the Society to the discrepancy of the observations at the Meteorological Observatory during the late cyclone; also to the destruction of the Anemometer, and moved that Government be solicited to make enquiry into the causes of these

failures, as well as to make provision for more perfect observation in future.

Mr. Waldie then made some further remarks on the Hooghly water, a subject that had already been before the Society.

At the meeting in December, a paper was read on the Himalayan Bear, and the question of its carnivorous propensities was discussed in reference to a letter on the subject from Dr. Stewart of Lahore. The result of the discussion was to prove that the animal certainly is carnivorous, not only by nature, but by habit, when it has the opportunity.

Col. Fytche, C. C. of British Burma, then read an interesting paper on the Panthays, Soonic Mahomedan inhabitants of Younan, and in his description, gave an account of these descendants of one of the widely spread waves of conquest that once swept over India, in the early days of Mahomedan invasion. Their history and actual position were narrated, and have a peculiar interest at the present moment, when an expedition, of which I am rejoiced to say Dr. J. Anderson, our Natural History Secretary, is a member, is about to start for the exploration of this province, with a view not only of scientific research, but of opening out the trade with China.

This closed the proceedings of the ordinary monthly meetings during the past year. The subjects discussed have been various and interesting; comprising Meteorology, Philology, Ethnology, Anthropology, Physiology and Histology, Chemistry, Archaeology, Palaeography, Botany, Engineering and Numismatology, Geology, Geography and Zoology. This appears to me to have been what was contemplated by Sir W. Jones when he founded the Society, and I would fain hope that the subjects of our future proceedings will be equally varied.

I must now pass on to other matters, and in noticing the obituary, which, I regret to say, is heavy, I have to pay a tribute to the memory of several distinguished members whose loss we have to regret during the past year.

First on the honorary list, it is my melancholy duty to record the loss of the veteran, Professor Franz Bopp, who may be rightly styled the Father of the Science of Comparative Philology. The Leipzig Illustrated News of the 2nd November, 1867, contains the following announcement. Died at Berlin on the 22nd October, 1867, Dr.

Franz Bopp, ordinary Professor of Oriental languages of the Faculty of Arts of the University of Berlin, to which he had belonged since 1822. He was born on the 14th September 1791, at Mayence, and was famous as being the founder of Comparative Philology, also as the author of many scientific works. He was a member of the Institute, a Knight of the Civil Order of Merit, Knight of the Red Eagle of the second class with the Star.

This brief newspaper notice gives but a faint outline of the history of this eminent Philologist, whose whole life was devoted to the study of language, and especially of oriental literature. Dr. Bopp's philological labours have formed a new era in linguistic studies. His great work, the Comparative Grammar of the Sanscrit, Greek, Latin, Lithuanian, Ancient Slavonic, Gothic and German, presents a complete analysis of the grammatical form of the Indo-Germanic languages; and the general laws he deduces from them, are considered highly creditable to his perspicacity. His writings which are both numerous and voluminous, have greatly facilitated the acquirement of the Sanscrit language, and his translations of various Indian classics have contributed largely to our knowledge of oriental poetry, morals, and philosophy, as exhibited in the ancient literature of India. For a general notion of what has been achieved by this great scholar, reference may be made to the Edinburgh Review, No. 192, p. 298, and to the Calcutta Review, No. 24, p. 468. It will there be seen that this work has created a new epoch in the Science of Comparative Philology, and that it may justly be assigned a place in that department of study, corresponding to that of Newton's in Mathematics, Bacon's in Mental Science, or Blumenbach's in Physiology." Professor Bopp, for his great services in the Science of Comparative Philology was elected an honorary member of this Society in the year 1831. It is but little to say of him, that Philology has lost its greatest light, and this Society one of its brightest ornaments.

In the Raja, Sir Radhakant Deva Bahadoor, K. S. I. we have also to mourn the loss of a Sanscrit scholar, and author of the highest distinction, whose name has adorned our list since March, 1855, when for his great services in the course of oriental literature, he was elected an honorary member. It was my duty on a former occasion to announce to the Society the death of this great man at a ripe old age,

and in doing so, I alluded to his merits not only as an oriental scholar and author, but as a foremost man in native society, and a leader of Hindoo thought. His great work, the Sanscrit Encyclopædia, (*Sabda Kalpadruma*) of 8,000 pages, over which the greater part of his life and much of his fortune had been spent, has immortalized him in Sanscrit literature, as have his many virtues in the hearts of his countrymen; it has gained for him the highest honour from scholars and crowned heads in Europe, and last of all, and perhaps that which afforded him most gratification, the knighthood of the Star of India, as a recognition by the Empress of India of the claims of her learned subject. His labours and character are so well-known, that it is unnecessary for me to add to the many appropriate encomiums that have been passed on his life and works; I have only to place on record the deep regret with which we learned that India had lost one of her most distinguished scholars, and our Society one of its most honored members.

M. Reinaud was born at Lambesc en Provence in 1795, and commenced his education at Aix, whence he went to Paris in 1814, to begin those oriental studies in which he subsequently became so great a master. He was elected an honorary member of this Society in March 1840, and I regret to say we have received news that the death of this great Arabic scholar took place on the 2nd January, 1867, at Nice.

M. Reinaud was professor of Arabic in the school of living oriental languages in Paris. He was also custodian of the oriental MSS. in the Imperial Library, and he was the author of many historical and geographical works. He has left two which are about to be published; one is a report on the progress of Arabic literature in France during the past 20 years. The other is the first volume of a collection of Arabian historians of the Crusades, the publication of which had been entrusted to him by the "Académie des inscriptions." M. Mohl in his address to the Société Asiatique de Paris has the following remarks:—

"In his ardour for work, M. Reinaud paid regard neither to the demands of age nor the exhaustion of his powers. About two years before his death, he appeared to have had a vague idea that he ought to diminish the amount of his work, and apply himself solely to the

completion of that which he had begun. He ought indeed to have ceased at that time from all labour, but he could not reconcile himself to inactivity; and the consequence was, that he fell a victim to one of those terrible accidents by which an overwrought brain sometimes revenges itself on those who deny it necessary rest."

M. Reinaud was President of the *Société Asiatique* for 20 years, and he discharged the duties of that office with extraordinary exactitude. It was his perseverance in all he undertook, that enabled him to attain to the high position he held. It was by slow but incessant labour, and by being careful never for a moment to lose sight of the object he had in view, that he was enabled to render his talents so profitable. For his high attainments in Arabic literature, he was elected an honorary member of this Society in March, 1840.

It is not only in Philology that our loss has been heavy, we have also to deplore the death of a Physicist of great distinction, one whose fame too had been acquired in India. The death of Sir George Everest would have been noticed at the last annual meeting, had not the news reached us somewhat late for that occasion. This eminent Surveyor and Geographer was born at Gwerndale, Brecon, on 4th July, 1790, and entered the Bengal Artillery in 1806. Almost from his arrival in India, his scientific career may be said to have commenced. Having been selected for the duty by Sir Stamford Raffles, he made a reconnaissance survey of Java, during the British occupation of that Island from 1814 to 1816. His next work of importance on his return to India, was in connection with Engineering, and particularly on the Telegraph between Benares and Calcutta.

In 1818 he entered the great Trigonometrical Survey as an assistant, and his first employment in this new Department was in the Nizam's dominions. Here the climate so much affected his health, that he was obliged to go to the Cape for change; and during this period he wrote a paper, which was published in the proceedings of the Astronomical Society, on the circumstances appertaining to the Abbé de la Caille's arc.

In 1823, on the death of Colonel Lambton, Captain Everest became Superintendent of the Survey, and he worked with so much ardour in this new office, that he was compelled to go to England for rest and change. He returned to India well supplied with Geodetical

Instruments, and fortified by his own study of all that was new or important in the surveys in Europe. He was now appointed to the high office of Surveyor General of India. Under his direction, this work progressed, and other measurements of the great arc were carried on, until the whole Indian arc from Cape Comorin to the Himalayas was completed.

The operations involved in this important work were described by Colonel Everest in his work on "the measurements of two Sections of the Meridional arc of India." He was elected an honorary member of this Society in 1860, and on that occasion it was justly said—"Of the many works executed under Colonel Everest's directions, the most important, and that by which he will be best known to posterity is the Northern portion of the great Meridional arc of India, $11\frac{1}{2}^{\circ}$ in length. No Geodetic measure in any part of the world surpasses or perhaps equals in accuracy this splendid achievement. By the light it throws on researches into the figure and dimensions of the earth, it forms one of the most valuable contributions to that branch of science, which we possess, whilst at the same time it constitutes a foundation for the geography of Northern India, the integrity of which must for ever stand unquestioned. Colonel Everest reduced the whole system of the Great Trigonometrical Survey of India to order, and established the fixed basis on which the geography of India now rests."

His name is perpetuated in India by being associated with one of nature's grandest works. The highest peak of the Himalayah 29,002 feet above the level of the sea, is Mount Everest: a graceful compliment to his distinguished predecessor, paid by Sir A. Waugh, the late Surveyor General. On retiring from the service he received the honors of Knighthood, and was elected on the Council of more than one learned Society. They, in common with ourselves, have to deplore the loss of this great geographer, whose death occurred at the ripe age of 77, when he had been about six years an honorary member of this Society.

From the ordinary list we have to regret the loss of Major General Sir J. B. Hearsay, K. C. B. a member since the year 1848. Though I am not aware of any contribution especially made to the Society by this distinguished officer, it is worthy of record that amid the arduous duties of a Military Commander, he yet found leisure as a sportsman for the exercise of his tastes as a field naturalist.

Though hardly the occasion to descant on the brilliant Military career of the deceased, I may not omit a simple reference to the long and distinguished service, which, commencing in Bundelcund in 1809, became more conspicuous in the Pindaree campaign, and gained for him preeminent distinction at Seetabuldee, again at Bhurtpore, and later in the Punjab and at Guzerat, until finally he gained his greatest laurels during the mutiny; services which won for him not only the honors of the Knighthood of the Bath, but the respect and admiration of his countrymen.

In addition to the persons whose names I have mentioned, the Society has to regret the loss of several other members. Lieutenant-Colonel Short, R. Bengal Engineers; Major Fuller, R. A. Director of Public Instruction in the Punjab. The Hon'ble Mr. Justice Shumboonath Pandit, the first native judge of the High Court, and Baboo Jadava Krishna Singh. These gentlemen were all distinguished in their own especial walks of life, but, with the exception of Baboo Jadava Krishna Singh, a Sanscrit scholar of note, who served as a Member of the Council, and was for three years a Vice-President, none of them, that I am aware of, took an active part in the work of the Society.

I am happy to announce that the Government has generously granted a sum of Rs. 680 for the repairs of Sir W. Jones's tomb. It appears to have fallen of late into ruin, and an estimate being called for, we found that the sum required was beyond the straitened resources of the Society. We accordingly applied to Government, who, with prompt liberality, granted the necessary funds. The repairs are again progressing, having been retarded by the late Cyclone. There has been some delay, but we have reason to believe that ere long the resting place of the Founder of our Society will be restored to a state of decent repair.

I am glad to say that, notwithstanding casualties, our numbers have increased, we have had an addition of 53 new members to our list. By death or resignation we have lost 27, but this still leaves us a net increase of 26, which, added to 391, the whole number at the beginning of the year, makes a total of 417 members; this is the largest number that the Society has hitherto had on its rolls.

There are four vacancies among the honorary members, and it will be the duty of the Council to submit certain names distinguished either in Philological or Physical science, that I believe will command universal approval.

In addition to the subjects discussed at the monthly meetings, there are others that require notice. In Dec. 1865, I proposed to the Council that an effort should be made, with the aid of Government, to bring together in one great congress, representatives of the races of man of the old world, pointing out, at the same time, that Calcutta was peculiarly favorably situated for the accomplishment of such a project; the suggestion was well received by the Council, and it has been approved by scientific men generally. Great difficulties lay in the way, but none, it appeared to me, that science, aided by money, could not overcome; and as the object was one of universal interest, it was not surprising that it excited attention, for surely on no point of natural science could investigation be better bestowed, than on that which might throw light on some of the most interesting problems in the natural history, age, and affinities of our race.

I must here express my acknowledgments to Mr. E. C. Bayley the President, to the Council, and to Dr. J. Anderson, the Nat. Hist. Secretary, for the encouragement and assistance I received from them towards the development of the project. The Society is also deeply indebted to the Government for the part it has taken in advancing the subject of ethnological enquiry. Reports have been called for by all the Governments from their subordinates in India, and already a large collection of valuable papers on the various tribes under their jurisdiction have been received. Photographic representations of many of the Hill races have been presented, and not only has sanction been accorded to Colonel Dalton to edit a work on certain of the Indian tribes, of which work four chapters are already finished, but Dr. Simpson, who has done so much already for Ethnology with his Camera, has been permitted by Government to complete the photographs still wanting to illustrate the work. It has been a subject of great gratification to the Ethnological Committee to find that so many of these gentlemen, notwithstanding their multifarious and arduous duties, have entered into the enquiry with spirit, and have furnished reports that are as creditable to them as

valuable to us. To Colonel Dalton especially are we indebted for many contributions, and for his services in editing the work upon which he is now engaged.

The original design of a congress of all the races of the old world, has undergone some modification, and it has been reduced to the minor proportion of a congress of the races of India.

The scheme progresses but slowly. Financial difficulties stand in the way, and it is not yet sufficiently matured, to assure us that any prospect of its early realization is practicable, but still the subject of ethnology has received an impulse, and men's minds are gradually becoming more and more imbued with interest in one of the leading questions of scientific enquiry of the present day.

A vast amount of valuable information has been collected,* and by

* ETHNOLOGICAL REPORTS.

Received from the Government of Bengal.

From the 24-Pergunnahs.

Patna.
Beerbhoom.
Burdwan.
Western and Eastern Doars.
Dacca.
Rajshye.

Cuttack.
Purneah.
Bhangulpore.
Chittagong.
Assam.
Tirhoot.
Straits Settlement.

Through the Government of India, Home Department.

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| Central India. | Rewah. |
| Gwalior. | Bhopal. |
| Malwa. | Nowgong. |
| Sirdarpore. | Hyderabad. |

Through the Government of N. W. P.

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| Dehra Dhoon. | Etah. |
| Saharanpore. | Mynpoorie. |
| Mozuffnuggur. | Furruckabad. |
| Meerut. | Futtehpore. |
| Boolundshur. | Allahabad. |
| Allyghur. | Hamceerpore. |
| Rohilcund. | Cawnpore. |
| Agra. | Banda. |

the aid of Government, the Society is gradually becoming acquainted with the numerous varieties of the human race living under the Indian Empire. Craniological collections are also being made by the Natural History Secretary, and to these also, from the valuable aid of the District and Medical Officers, we look for further contributions.

At the last meeting of the British Association, held at Dundee, the subject of enquiry into the history, habits and peculiarities of certain of the Autocthones of India was discussed, and a committee of Savans nominated for the purpose of communicating with the Secretary of State for India, with the view of obtaining information on these and kindred subjects. As this question, on a larger scale, had already been raised by this Society some time ago, I wrote to the Secretary to Government in the Home Department begging him to move Government, in the event of any action being taken by the Secretary of State at the instance of the Committee of the British Association, to associate our enquiry with theirs. The Government was pleased to reply that the action of the Asiatic Society in this matter had already been reported to the Secretary of State, and that with reference to delay on the part of some of the subordinate governments in sending in ethnological reports, reminders should be forwarded to such as had not yet complied with the requisition.

With reference to the reports already received, I should weary your patience were I to enter into details. But I take this opportunity of placing on record the cordial acknowledgments of the Society

Busti.
Mirzapore.

Benares.
Ghazipore.

Bombay Government.

Kurrachee.
Sind.
Hydrabad.
Ahmedabad.

Kaeri.
Surat.
Poonah.

Madras Government.

Two reports from the Inspector General of Madras.

to those gentlemen who have done so much for ethnology, and who, amid the labours of their official duties, have yet found time to compile these valuable papers.

As to the scheme itself, I may say that it has been generally approved of. All see the difficulties, but all equally recognize its value if carried out in a liberal and scientific spirit. My friend, Professor Huxley, gave it his approval, and regretted that he should not have the opportunity of being here to see it carried out.

For my own part I cannot see that the difficulties to be overcome are greater than those which had to be dealt with in the Great Exhibitions in England and France, or even on a minor scale in this country. The success of these proves that where the will exists, the way is not impracticable. It is merely a question of money and scientific enterprise. In the former we may be wanting, but I trust not in the latter, and I am glad to think that the experiment, on a small scale, has already been made in the Central Provinces, by the spirited and energetic ruler of that part of India.

I am, however, quite aware that the present is not the time to hope for much pecuniary support or aid from Government. Famine and flood, war and pestilence have prior claims to science on the coffers of the state and the liberality of the public; in the mean time we must go on collecting all the information we can get, feeling thankful for what we have already received, and looking hopefully for more.

It is with great pleasure that I refer to the sanction of Government accorded to the appointment of scientific observers with the expeditions about to penetrate into Abyssinia and Yunnan. On learning that an expedition was to enter Abyssinia for the purpose of releasing the British subjects kept in duress by King Theodoros, I addressed the Secretary in the Home Department, in the name of the Society, requesting him to move Government to sanction the appointment of scientific observers to accompany the expedition, pointing out briefly the interest with which science looked on this opportunity of adding to our knowledge of the Fauna, Flora, Mineralogy and Geology of these countries. The opportunity was also taken of asking for the appointment of some one to accompany the expedition then projected to the Nicobar Islands. Almost by return of post, we received the gratifying intelligence that the Viceroy had approved of the suggestion, and had nominated Mr. W. Blanford to

the former and Mr. J. Ball to the latter expedition. We learned shortly after that the Bombay Government contemplated the organization of a scientific establishment on an extensive scale, and we therefore anticipate the most satisfactory results. The expedition to the Nicobars has apparently been abandoned and Mr. Ball's services are consequently in abeyance.

It is not less satisfactory to know that another member of our Society, Lt. Beavan of the Bengal Staff Corps has been appointed by the Secretary of State, at the instance of the Zoological Society in London, to accompany the expedition to Abyssinia, as Naturalist. We have thus earnest of real work, and we look forward to most important results.

Our energetic Natural History Secretary, Dr. J. Anderson, Curator of the Indian Museum, has been appointed by the Government of Pegu to accompany the expedition into Yunnan. As this is a country all but unknown and unexplored, we have promise in the well-known energy of our Secretary of much valuable addition, not only to our stock of knowledge, but also to our collections. It is not only in these special fields of research, but I am happy to say all over India, that our members are zealously working, and by their contributions daily adding to our knowledge of the country, its products, its people and their languages.

The various Committees of the Council have worked zealously and well. It would be impossible in the short space of time available for an address of this nature to specify or even notice all their proceedings, I shall content myself by remarking on what is most important. The Philological Committee have made arrangements for printing a Grammar of the Lepcha tongue by Major Mainwaring, and application has been made to Government for the Major's services, that he may have an opportunity of revising his Grammar among the Lepchas themselves.

The Chief Commissioner of Rohilkund has also been requested to obtain for the Committee, a Catalogue of the Persian works in the Library of the Rajah of Rampore.

On the recommendation of their Secretary, Babu R. Mitra, the Philological Committee have adopted the Jonesian system of transliteration, as modified by Professor Wilson, in spelling oriental words; and have also adopted a key to the system, by the Secretary, who has printed

and circulated 2,500 copies. It is to be hoped that this key to a uniform system of spelling Indian words will bear abundant fruit; for the Government has directed its distribution among the officers who are engaged in making ethnological reports.

With reference to the new Act for registering every book printed, and for keeping copies of each to form a Bengal library, the Committee had offered, on certain conditions, if required, to take charge of the books; but the necessity for doing so has been obviated by the appointment of a Librarian on the part of the Government.

It is with great satisfaction that the Committee report the completion of the long expected Pali Grammar.

The important question of the Catalogue has been frequently discussed, but without any satisfactory conclusion having been arrived at. It has, however, been resolved that a revised edition of the alphabetical Catalogue shall be published meanwhile.

The state of the library has improved since last year; the Librarian has arranged in separate cases all the works on Natural History, Botany, Agriculture, Grammar, Mathematics, Chemistry, Meteorology, Law, Theology, the Dictionaries and Transactions of Societies, which were formerly mingled, without order. This new arrangement is on the point of being completed.

A classified list of all the works on natural history has also been drawn out.

The hours during which the library is kept open have also been extended: it is now open from 10 to 5, instead of to 4 p. m., and I may incidentally mention, that the Council have acknowledged the merits of the Assistant Librarian, Babu Money Lal Bysack, by increasing his salary.

New books, periodicals, papers and transactions of learned Societies have been received as usual, and to the extent following:—

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| New books, presentations, | 248 |
| Do. from Government, | 67 |
| Authors' editions, | 49 |
| From Societies, foreign and local, | 132 |
| No. of papers received, | 23 |

Most of the new books are works on natural history. With reference to the new alphabetical catalogue sanctioned by the Council, the

Library Committee have asked for a grant of Rs. 1,600, which the Finance Committee will grant when the funds will admit of it. As to donations of specimens, a considerable number have been received, of various kinds : they have been added to the other collections transferred to the Indian Museum. But as the inventory of the specimens to be made over is not yet complete, the formal transfer is not yet accomplished ; nor can it be until the new Museum is ready for their reception. I may add that, with the view of completing the inventory, two assistants have been employed, entailing a considerable expense on the Society whose funds at present are ill able to bear any extra strain. We have therefore, as the work is done as much in the interests of the Museum, as of the Society, asked the trustees of the Museum to share the expense attending the completion of a *catalogue raisonnée* of the collection.

The Natural History Committee has also transacted its share of the business of the Society.

At the first meeting I proposed that an attempt should be made to establish a zoological garden in Calcutta. At the subsequent meetings, the Committee matured the scheme ; ways and means, plans and localities were discussed, examined and inspected, and the project becoming known, it received the munificent offer of 30,000 Rupees from the Rajah of Burdwan, and of Rs. 3000 from Babu Rajendrá Mullick. The Committee subsequently associated itself with the Agri-horticultural Society with the view of developing the project into the more extensive one of a public garden, a peoples's park, where not only might the public seek recreation and health, but also have the opportunity of studying natural history and horticulture. It applied to the Government of Bengal for a piece of land for the purpose ; subsequently a deputation from the joint Committees waited on the Lieutenant-Governor and explained their object. It met with a most gracious reception, and Mr. Grey expressing himself generally in concurrence, stated that he had doubts as to its success, and as to whether the piece of ground asked for, viz. the Kidderpore property, recently taken over by Government from the Orphan Society, would be given ; but promised to examine the site, and give a reply to the deputation. Up to this time, no answer has been received ; but the Committee feel satisfied that this as

all other questions, concerning the public good, will receive His Honor's due and deliberate consideration.

As to the subject of the garden, I hope the project will not be abandoned; for not only is Calcutta wanting in a Zoological garden, but also in public and open spaces away from the city, where the people can combine instruction with recreation; in this respect it is far behind other cities in India.

In the department of Numismatics, some additions have been made to the collections; about 30 ancient coins have been added to the Cabinet, besides a large collection of modern European gold and silver pieces, which were purchased from the Bank of Bengal. Arrangements are being made for rearranging the collection.

Though not so completely as we could wish, yet some work has been done in the department of meteorology; and with the aid of Government, which has to a considerable extent already been afforded, it is to be hoped that a system of meteorological observations may be carried on throughout the country that shall be of service and capable of rendering trustworthy conclusions on this all-important subject.

In 1864, our Secretary, Mr. Blanford, drew up a report on the subject of the Asiatic Society's action in promoting meteorology, which was submitted to Government. In March 1865, Sir Cecil Beadon appointed a Committee, consisting of three members of the Society, viz. Col. Gastrell and Messrs. Blanford and Obbard, to arrange and carry out a plan of meteorological observation for the protection of the port, by enabling the shipping to have warning of approaching storms. The Committee established a series of stations, beginning with Saugor Island, from which telegrams were received twice a day, and one of the members undertook the examination and revision of these reports, and warned the shipping through the Master Attendant, whenever the reports indicated approaching mischief. The most noticeable result of the Committee's labours is the preparation of a report on the cyclone of 1864, by Col. Gastrell and Mr. Blanford, which was published by the Bengal Government and distributed to a large number of scientific bodies and eminent meteorologists in Europe, America, and elsewhere.

In April last the executive work of this Committee was transferred to a paid officer, (Mr. Blanford) and steps are now being

taken to extend the system to a considerable number of stations throughout Bengal, and we can only hope that such encouragement and aid may be held out, as to render the scheme not only of scientific value, but also of actual utility in warning and preparing the people throughout the province generally, of the approach of such terrible visitations as the cyclones of 1864 and 1867. There can be no doubt that the practical value of such an arrangement was prominently shown in the case of the late cyclone, where the shipping being duly warned, were enabled to make preparations against the hurricane. Could such warning have been more general, it is impossible to say how much of life and property might not have been preserved. The Committee have recommended to Government that certain stations in the city, the Dockyards or near the river, shall be appointed, where warning and danger signals may be shewn when the approach of a storm is apprehended. Speculation on the past is, however useless, unless it be with the view of profiting for the future—and while we feel regret that comparatively little has yet been done, we may look forward with hope to a wider and more direct extension of this application of science to practical purposes and ends. In the N. W. and Punjab, paid officers were appointed as meteorological reporters, about the same time as the Committee was appointed in Bengal, and two annual reports have already been published. In Madras, I may observe, a system of meteorological observations is being carried out, which appears worthy of imitation. It is systematic from the commencement, and the whole being placed, from the outset, under one well qualified meteorologist, the greatest care is given to the comparison and proper testing of the instruments. The observers are trained to their work, and have it alone to attend to. All stations will be furnished with complete sets of instruments, and no registration will be attempted until these preliminaries are satisfactorily completed. It is the attempt, no doubt unavoidable, to commence with imperfect means, that has rendered much of the work hitherto performed in Bengal, the North West Provinces, and the Punjab of less value than could be desired. The meteorological officers, both of Bengal and the N. W. Provinces are most anxious to give to their own departments, that completeness and uniformity, that constitute the great merit of the Madras system, and to adopt an uniform system of registration in all

the Presidencies; while they are fully awake to the importance of working cordially together. There is every reason therefore to believe, that with the support of Government, a system of meteorological registration will before long be adopted throughout the greater part of India, possessing the all-important characteristics of uniformity and trustworthiness. The system of storm-warnings is at present peculiar to Calcutta, where indeed it is of most importance. In the late cyclone, the reporter was able to give notice to the Master Attendant, about eight or nine hours before the wind became violent, and eleven hours before the storm reached its maximum. Some correspondence on the subject of the meteorological reports during the late cyclone, will probably be laid before the next ordinary meeting.

The Asiatic Society has thus inaugurated a system of meteorological observations and registration, and has long published the reports which are kept in the Surveyor General's office and for which we herewith offer our acknowledgements; it has also been acting conjointly with Government in aiding the furtherance of the important subject of registration. I trust that neither failure of scientific energy of the observers on the one hand, nor lack of aid on the other, will prevent the development of what is so much needed, a thoroughly scientific and practical system of meteorological observation and registration throughout India.

And here I think I may take the opportunity of offering a remark (as germane to the subject) on Physical science generally, as represented in our educational establishments in India. The immense development of the Physical sciences has been declared by the Duke of Argyll to be "characteristic of our times," and truly we might be glad if we could apply this remark to India; for if ever we propose to educate the people thoroughly, to lead them from lower to higher truths, it can only be by making them acquainted with the subjects included under the comprehensive term of "Physical Science." If superstition and prejudice are to be uprooted as a preparation of the way for more enlightenment, and knowledge of a higher kind, it can only be by imbuing them with a comprehension of those general laws by which all physical phenomena are regulated. I before remarked that one object of this Society,

and one that has perhaps been too little heeded, is the advancement of Physical Science in this country. It is not here, though, that the elementary knowledge could be imparted, but in the schools where the youthful mind is trained to observation and comprehension of laws, the results of whose operations are recorded and verified here. And yet, I regret to say, the only means of teaching even the rudiments of Physical Science in this Presidency, (I know not how it is in the others,) are such as are afforded by one chair in the Presidency and those in the Medical College in Calcutta, whilst in the N. W. not a single chair of Physical Science, with the exception of that at Roorki, which is restricted to a limited class of Engineering students—exists. It appears to me that this is a subject worthy of consideration, not merely by this Society, but by the educational authorities, with a view to its being remedied; for not only do we regret the paucity of actual means, but it is to be feared there is a tendency to discourage even those that already exist, and to discontinue the teaching of physical science at all. This is surely opposed to sound educational policy, especially in the case of a people like the natives of this country; and it certainly is at variance with the spirit of the University scheme, which has invariably insisted on its adoption.

The Journal of the Society has been regularly published, that is to say, two Parts of each series, (the Physical Science and the Philological) have appeared under the supervision of their respective editors. There has been delay in their issue, but it was unavoidable. The cost of bringing out the Physical Science Part has been unusually heavy this year, and it may perhaps be necessary to delay the issue of the next number. The articles are all interesting, and some of them have been read at the monthly meetings. I have not time for more than simple allusion to them by name: they are "On the Initial Coinage of Bengal," by E. Thomas, Esq.; "Notes On the Jumna Masjid of Etawah," by C. Horne, Esq. C. S.; "Translation of an Inscription copied in the temple of Nakhon Vat or the City of Monasteries, near the capital of ancient Kambodia," by Dr. A. Bastien. In the 2nd No. "Notes on Suraj-ood-dowlah and the town of Moorsheedabad, taken from a Persian manuscript of the *Tarikh i Mançuri*," by H. Blochman, Esq. M. A.; "Notes on Buddhist Remains near Mynpoorie," by C. Horne, Esq. B. C. S.; "Notes on the Carvings on the Buddhist post-rails

at Buddh Gaya," by the same author; "The Pegu Pagoda" by Capt. H. A. Browne, Deputy Commissioner of Rangoon; "On the Antiquities of Bagerhat," by Babu Gourdash Bysakh, Deputy Magistrate and Deputy Collector, Manbhoom; and "On the Translation of Indian Alphabets in the Roman character;" by F. S. Growse.

In the Physical Science section, edited by the Natural History Secretary, we have several elaborate papers under the following headings "Experimental Investigations connected with the supply of water from the Hooghly to Calcutta," by D. Waldie, Esq.; "Kashmir, the western Himalaya, and the Afghan Mountains," being a geological paper, by Dr. Albert Verchere, with a note on the fossils by M. Edouard de Verneuil; and "Contributions to Indian Malacology, being a List of Estuary shells collected in the delta of the Irawady in Pegu, with descriptions of the new species." By W. T. Blanford, Esq.

The Physical Science Part of the Journal bids fair to attain to as high a place in the estimation of the scientific world, as that the Literary and Archæological has so long held in its own department.

It would be impossible for me to give even an abstract of these papers in the short space of time available for an address of this nature; there can, however, be no doubt that the selection has been well made, and that each of them is a valuable contribution to the annals of science.

You have learned, from the Philological Secretary, what the proceedings of the Bibliotheca Indica have been during the past year. Its labours have progressed with the usual ardour displayed by the learned Philologists who conduct the publication of the oriental works: which render it so much valued, not only in India, but by oriental scholars in Europe. The death of one of its most learned editors has interfered with the publication of the Sanscrit works; but those in Persian have appeared with the usual vigour. It is unnecessary for me to say more on a subject that has already been so fully reported on by the gentleman under whose guidance it is conducted.

You have heard, from the annual report, a detailed account of the state of our finances, which I am glad to say, though not in a very prosperous condition, are better than they were last year. The indication of the necessity for economy, however, is unmistakeable; and the

Finance Committee will need to exercise most rigid supervision over the expenditure, to keep within bounds and preserve the Society from debt.

The actual condition, it appears, is about as follows. We have Rs. 3,487 in the Bank of Bengal, a small sum of Rupees 38 in hand; Government securities to the extent of Rupees 2000, and an uncertain amount, said to be about Rupees 9,070 of outstanding dues; making a total of Rupees 14,598. Great part of this no doubt will be gathered in in time, but some of it I fear must be written off to Profit and Loss. Against this, we have debts of Rupees 7,450, the main items being for printing; Rs. 4,974 to one Press. This leaves us free from difficulties, and though not rich, we are certainly not embarrassed by any immediate pecuniary anxiety. By strict supervision on the part of the Finance Committee, and economy in the Council, I trust that we shall be able to continue without getting into debt, and with the increase of Members which may be anticipated, I hope next year may see the Society more prosperous than it has been.

I should omit an important part of my duty, were I to fail, on this occasion, to express the thanks that are due from the Society to the Honorary Officers; to Mr. Blanford, and to Mr. Ormsby who officiated during Mr. Blanford's temporary absence—to Dr. J. Anderson, the Natural History Secretary; to Babu Rajendralal Mitra the Philological Secretary; to Colonel Gastrell, the Honorary Treasurer, and to Mr. Medlicott who acted during Col. Gastrell's absence. To the exertions of those gentlemen, and especially to those of the General Secretary Mr. Blanford, we mainly owe the Society's prosperity. Their labours are very arduous, and must encroach seriously on such leisure as may be left by their public duties. How successfully these good offices have been performed, is proved by the present state of the Society; and in its name, I now express our warmest acknowledgements. In recognizing our debt to the honorary officers, I must not forget our obligations to others. The Assistant Secretary and Librarian, and his Assistant have conducted their duties with much zeal and energy as well as with advantage to the Society, and therefore merit our best thanks.

The Establishment generally has, I believe, given satisfaction to the officers of the Institution.

I must now conclude, as I fear I have already trespassed too long on your patience. I can only beg of you to overlook the imperfect

way in which I have performed my part of the work, and express a hope that under my successor, the progress of the Society may be all that you can desire. I am most grateful for the consideration that would have allowed me to retain the chair I now vacate; but I feel more than ever the force of what I said, when I accepted the office, that it should be held by some one with more leisure and more special aptitude than I have for the work. I feel that this, almost the only scientific Society on this side of India, should have great aspirations, as I believe it has a great work to perform. Its object is to develop the scientific resources of India, and to make them known to Europe, to influence both countries for their mutual good. How much this implies, I cannot now stop to speculate.

To preside over a Society with such aims is, I repeat, the work of those who represent philological or physical science, and I am glad to think that I make over my trust to one so eminently fulfilling this condition. My own interest in the Society of which I am now an old member, will remain unabated, and I shall look forward with confidence to its rise to a point of equality among other similar Societies in Europe, feeling sure that if it be conducted in accordance with the Founder's wishes, the ends he looked for, will certainly be attained.

Dr. Fayerer then vacated the chair, which was taken by the Hon'ble J. B. Phear.

The meeting then resolved itself into an ordinary monthly meeting.

Ordinary Meeting.

The minutes of the last meeting were read and confirmed.

The following presentations were announced—

From Dr. T. Anderson, Superintendent, Botanical Gardens.

1. A copy of Mr. Kurz's "Report on the vegetation of the Andaman Islands."

2. From Dr. Franz Steindachner, through Dr. F. Stoliczka: four pamphlets, viz.—

Reise der Oesterreichischen Fregatte Novara um die Erde in den Jahren 1857, 1858, 1859: Zoologischer Theil; Erster Band.

Reptilien.

Do. do. Amphibien.

Ichthyologische Mittheilungen (IX).

Über einige Fische aus dem Fitzroy Flusse bei Rockhampton in Ost Australien.

3. From Captain T. C. Anderson, two pamphlets, viz.—“A few words about two Andamanese lads;” and “Last words of a few Celebrities.”

4. From the Rev. C. H. A. Dall; Gover's “Uniform Meteorology for India.”

5. From H. Blochmann, Esq. M. A.; The Persian Metres by Saifi, and a treatise on Persian Rhyme by Jami.

6. From Dr. Leitner through Mr. Grote; “Results of a Tour in Dardistan, Kashmir, Little Tibet, Ladak, Zauskar, &c.” Vol. 1 part 1.

7. From Babu Kanayalala Dea; The Indigenous drugs of India.

8. Letters from Major F. B. Norman, H. Beverley Esq. C. S. C. V. Bradford, Esq. and Bábu Bholanatha Mallika, intimating their desire to withdraw from the Society, were recorded.

The following gentlemen, duly proposed and seconded at the last meeting, were balloted for and elected as ordinary members.

Bábu Rákháladása Háldár.

J. Boxwell, Esq. C. S.

9. The following gentlemen were named for ballot as ordinary members at the next meeting.

Major Edgar Clark, Bengal Staff Corps; proposed by Captain A. D. Vanrenen, seconded by Colonel J. E. Gastrell.

John Kavenagh, Esq. Assistant Superintendent Survey and Settlement officer, Oude; proposed by Captain A. D. Vanrenen, seconded by Colonel J. E. Gastrell.

Gordon Robb, Esq.; proposed by Mr. H. Blochmann, seconded by Mr. Sime.

L. H. Lees, Esq. M. D. Assistant Surgeon, Calcutta; proposed by Dr. Collis, seconded by Mr. J. M. Scott.

The Council recommended the following alteration in the rules of the Society.

That to rule 43, the following words be inserted after the words “entitled to vote,” “*nor shall his name be entered on the member roll.*”

The Council recommended that the following gentlemen be elected as Honorary Members of the Society.

Dr. T. Thomson.

General A. Cunningham.

Professor Bāpudeva S'āstrī.

Also that the following gentlemen be elected corresponding Members of the Society.

Professor C. Holmboe, Christiania.

M. F. H. Foucaux, Professor of Sanskrit, College de France, Paris.

The Philological Secretary drew the attention of the members to certain valuable Sanskrit manuscripts lately purchased for the Library.

He said that during a recent tour in the North West, he had opportunities of examining a great number of ancient MSS. belonging to paṇḍits and others, from which he had selected 169, which he thought were interesting. Among them were 57 Vedic works, including either portions of the Vedas or commentaries on and exegeses of the Vedic rites. Regarding Indian philosophy, there were 11 works on the Vedānta, 8 on the Mīmāṃsā, and 22 on the Nyāya. There were besides 2 Tantras, 3 grammars, and several on law, metre, rhetoric, astronomy, &c. Most of the works were scarce and new to the Society's Library.

They were all of some age, and many had been read by generations of Paṇḍits, which had led to their being very carefully corrected. A commentary on the Taittiriya Āraṇyāka was nearly 300 years old, and of rare accuracy. A copy of the Uhya Gāṇa of the Sāma Veda bore date the 1652 Saṁvat = 1598. A. D., and was 270 years old; a codex of the Pañchaviṁśa's Prapāṭhaka of the same Veda was 343 years old, being dated 1581 S. = 1525 A. D. Considering that *charta bombycina* or cotton paper MSS. in Europe, notwithstanding the advantage of a favourable climate, were generally not more than four or five centuries old, this MS. may be valued for its great age. No doubt there were many Sanskrit MSS. extant older than this, and mention is made in Dr. Weber's catalogue of the Berlin Library, of a codex in the Chambers' collection, which was 489 years old (S. 1435), but those were mostly on palm leaves, which, like the parchment and vellum MSS. in Europe, generally last considerably longer than those that are written on paper.

The Philological Secretary read the following Note on a MS. English translation of the Mahābhārata belonging to the Society.

In Mr. Wheeler's interesting "History of India," mention is made of "the discovery of a manuscript translation of the more important portions of the Mahá Bháratá, which was lodged in the Library of the Asiatic Society of Bengal many years ago under a wrong title; and which," it is said, "there is reason to believe, was drawn up by the late Professor H. H. Wilson" (p.vii) As this MS. has supplied the bulk of the extracts published in Mr. Wheeler's work, a short account of it will perhaps not be uninteresting to the Members of the Asiatic Society.

The MS. is a foolscap folio, and was originally half bound in calf. The first eight folios are blank, and bear the late East India Company's water-mark stamp, and the date 1813. The first blank page has, in pencil, the words: "Translation of the Bagavitá, a Sanskrit Religious Book;" then, in a new line, the words "Enquire of Mr. Charles Wilkins India House," and a little below, in ink, the words "Index &c. N. B. The Gita commences at sheet 165." These notes evidently led to the work being taken for a translation of the G'itá and to its being entered in the Society's Catalogue under that title.

Interspersed in the volume, and at the end, there are several sheets of blank paper of 1813 and 1814. But the MS. itself is written on Government paper of an earlier date, viz. 1809 and 1810. The writer, who seems from the nature of his stationery to have been a Government servant, wrote his work on loose sheets, dating and numbering each sheet as he went on, and then got the whole bound in 1816. At that time, some sheets were found so written, that they could not be stitched without injury to the writing, and these, therefore, were put in recesses made by joining with wafers two blank leaves into the form of a case. Small slips containing notes have been at different places, pasted on the pages, but the number of these is not large. One of these slips is written on the fly-leaf of a private letter which contains the remnant of the address, N. B. Hal—(?) A little slip pasted on this, is another portion of the same letter, and has the words: "returned.

I am, Dear Sir,

Truly yours."

The note written on this slip bears date the 7th July 1816. Another fly leaf of a letter inserted opposite the 102nd sheet and first noticed by Mr. E. C. Bayley, has

"Mrs. Halh [ed ?]

20 Charle [s street ?]

Cavend [ish Square ?]"

The total number of written sheets included in the volume is 185. Of these the first ten are not marked, the numbering commencing with the eleventh. The first page bears date the 12th June, 1812, and contains a number of chronological notes which were written long after the text had been commenced. The upper portion of the second page is dated 24th February, 1812, and the lower portion 29th May, 1812, the third page has 26th May, 1811. The fourth and the fifth pages have no dates, but the 6th is dated 12th June, 1811, and all the three, I imagine, were written on the last mentioned day. These also contain notes by the translator, with references to his text and marginal Persian figures, probably to indicate the pages of some Persian original. The 7th page has for its heading the words "General Index to the Mahabharata, made by Vasant Rao Kâet, in the 31st year of Aurangzeb. The pages answer to Dr. Wilkin's great Persian folio."

The Index commences with the churning of the ocean as described in the *Adi Parva* of the *Mahābhārata* with a reference, in Persian figures, for details, to page 17 of Vasant Rao's text, and in English figures to the translator's folio 145. The Index is then carried on consecutively. The English translator commenced this part of his work on the 8th May, 1811, and writing daily from 1 to 3 pages, completed it on the 28th of May of that year, i. e. in 20 days, the last reference being to p. 706 of the Persian text. This Index covers 17 folios. Following it, there are a number of blank leaves, after which is inserted a small map of India printed for the "*East India Register*," without any tracing or mark of any kind to shew that the translator had worked on it in any way to illustrate his text.

Facing the map is the title page, bearing in large letters the words "Extracts, Translations, &c. from the Mahabharat, Persian copy." The extracts cover 175 sheets of paper, written in a cramped, small hand, in double columns. The lines are very close to each other, and very much disfigured by blottings, corrections and interlineations; which, aided by the discoloration and decomposition of the ink and paper in many places, render the whole very difficult to read. The proper names and important Indian words are, however, written

in large characters, and some words have their corresponding Persian version given in Persian letters. References to the Persian text are made with Persian figures. Quotations from the Persian text also occur frequently, and occasionally Greek and Hebrew words are given in their native characters, but in the whole range of a bulky book, avowedly a translation of a Sanskrit work, Sanskrit letters occur only fifteen or twenty times; shewing clearly that the translator depended entirely on his Persian text, and seldom referred to the Sanskrit original. Evidently he was not a Sanskrit scholar, and was unable to make any such reference. On one occasion he did so to ascertain the 160 (sic in MS.) names of the sun, but owing to his want of knowledge of the Sanskrit, he converted 108 names into 115. The error was so palpable, that he could not overlook it, and yet unable to correct it, he excused himself in a note in which he says: "In consequence of not knowing which words are simple and which are compounds, I have here made the names to be 115 instead of 108." In a subsequent note he says: "Perhaps the whole together may fully make up the number 160 as mentioned in the Persian translation."

The translation was undertaken, it appears from a date on the 5th page, on the 18th October, 1810, and carried on with occasional short interruptions to the 3rd July, 1813, when it was dropped at the middle of the fifth day's battle. The extracts, however, are not consecutive, but taken at random from different parts of the *Mahābhārata*. The work of each day is separately dated, from which it appears that the translator did not generally write more than 2 or 3 pages, and often not more than a page per day. This fact, coupled with the corrections and the interlineations above referred to, leaves no doubt about the MS. being the original writing of the translator and not a copy.

The work is avowedly made up of "abstracts and translations," principally from what is called "the great folio," meaning Vasant Rae's Persian version, and occasionally from a MS. which is indicated by the words "Library copy." Neither of these originals is now accessible to me, and in their absence, it is impossible to determine what portions of the MS. are abstracts, and what are translations from those works. I have compared different parts of the translation with Abul Fazl's Persian version, of which the Society possesses a good MS. in two volumes, but I can trace no correspondence. But

whether abstract or translation, certain it is that no portion of the work is a translation or even a fair paraphrase of the Sanskrit original. The skeletons of the different stories and episodes are no doubt given, but they are mere skeletons artificially articulated, and no more. Of the muscles and integuments which make up the figures and the spirit which vivifies them—of the details and descriptions which fix the character of the stories—they have none. To convey an idea of the extent to which the process of abridgment or condensation has been carried on, I may mention that the story of S'akuntalá i. e. of the birth of Bharata, which is the first extract quoted in Mr. Wheeler's book, as given by Vyása occupies 13 quarto pages of closely printed Sanskrit in the Society's edition of the Mahábhárata, and extends to 320 stanzas. In Mons. Hippolyte Fauche's French translation, this subject takes up about 33 octavo pages (pp. 297—330) and in Abul Fazl's Persian version 13 demi folio pages (pp. 47 b to 53 b), but in Mr. Wheeler's book it extends to only one page and two and half lines. All the other extracts are equally condensed and contracted, and as this abridgement was effected once by an uncritical Hindu translator who prepared his Persian version for the entertainment of Muhammadan readers, without the shadow of an idea as to what are the requirements of true history, and then by an Englishman who abstracted as much as he thought proper from the Persian without consulting the original Sanskrit, the result is such as to be utterly untrustworthy for critical analyses of the ages of the different portions of the Mahábhárata. In short, Mr. Wheeler's texts are abridged translations, of abridged translations, which, owing to that gentleman's want of familiarity with the Sanskrit, have not been so compared with the original as to render them reliable data for history.* I am sorry to be obliged to make this remark with reference to a book which has been well received by the reading public, and which is unquestionably very interesting, but for the sake of truth I cannot help it.

Of the history of the MS. I have not been able to ascertain any thing. No mention of it occurs in the lists of presentations to the Library published in the *Researches* and the *Journal*, nor in the MS. proceedings, all which I have carefully examined. That the MS. is

* Since writing the above I have been assured by Mr. Wheeler, that he had some of the more important extracts compared with the original Sanskrit by a young Sanskrit scholar Bábu Avinása'chandra Ghoshá, and that some are independent translations.

not the work of Professor Wilson I have no hesitation in saying. It is true that the late Professor alludes, in his "*Essays on the Purāṇas*," (*Journal Royal Asiatic Society* V. p. 64), and also in his Introduction to Professor Johnson's "*Selections from the Mahābhārata*," to an abstract of the great epic prepared under his superintendence, but this is not that work. It was in 1822 that the Government sanctioned an establishment of two pandits and 3 or 4 native assistants—young men brought up in the then recently established Hindu College—who, under the superintendence of Dr. Wilson, prepared abstracts of nearly all the Purāṇas, of some of the Upa Purāṇas, and of the Mahābhārata. Among the assistants who were engaged in this work, I may name Bābu Kās'īprasāda Ghosa, Bābu Tārāchānd Chakravartī, Bābu Chandra-s'ekhara Deva and Bābu Hoḍambanātha Thākura. The establishment was broken up in 1829. Copies of the works produced by these assistants, except the Mahābhārata and the Rāmāyana, exist in the Society's Library, but their style is so very different that, had the evidence of the dates been wanting, that would have of itself sufficed to shew that the MS. under notice is not one of them. It may be said that Wilson had prepared the translation himself long before the translation establishment was sanctioned or thought of. But such a position is not at all tenable. In the first place, Wilson nowhere says anything of his having ever prepared such a version, which he would, for certain, have done in his "*Essays*" and the Introduction above alluded to, if he had done so. Secondly, Wilson had acquired a thorough knowledge of the Sanskrit language in 1812, when he rendered into English verse the charming poem of the Meghadūta or "the Cloud Messenger," and it is impossible to suppose that he would have taken a Persian version of the Mahābhārata for his labours when he had the Sanskrit original open before him—the more so as he was a far better scholar in Sanskrit than in Persian. And thirdly, the style in which Wilson wrote, is so different from the writing of the MS. that that of itself is enough to settle the question. There are in the archives of the Society, a number of draft letters, minutes, and circulars, written by Wilson from 1816 to 1832, during the time he was Secretary to the Society, and these I have carefully examined, and they appear to me as unlike the writing of the MS. as they well could be. I have also examined the hand-writings of Colebrooke, Wilford and Mr. W. Blacquire, who was for a long time Government

translator and an active member of the Society, but they differ so much from the MS. that I have not the slightest suspicion of any of those gentlemen being the author of it. Wilkins published his translation of the Bhagavadgītā from the Sanskrit in 1785, and it would be absurd to suppose that he would do the same work over again, and that very imperfectly, from the Persian version, in 1812.

The question may be asked, are the scraps of the private letter noticed above portions of a letter which had been addressed to the translator or were they mere scraps of waste paper which he took up to write a note upon? Ordinarily people so use unimportant letters addressed to themselves, but seldom think of picking up other people's letters for such a purpose. Arguing on this theory, the name of the author of our MS. would be N. B. Hal — (?) Now, in the list of members of the Society from 1810 to 1816, the only name which has the initials N. B. is Edmonstone of the Civil Service, but none beginning with H. The second scrap suggests Halhed, the author of the Gentoo Code who had N. B. (Nathaniel Brassy) for his initials, but his name does not appear in the Society's lists for the second decade of this century, and I cannot ascertain if he was alive, and if so, in India at the time when the translation was prepared. His Gentoo Code was published in 1776, from which time to 1816 is a long period for a European to remain in this country. But from the dedication of his work to Warren Hastings, Halhed appears to have been very young in 1775—for he says in it: "I find myself involuntarily held forth to the public as an author, almost as soon as I have commenced to be a man." Supposing that he was then 23 or 24 years old, he would be about 60 when the translation was undertaken. This would not be too advanced an age for a European to indulge in light literary recreation. But judging by the directions in the address of the second letter he must have been then in England, whence his MS. was subsequently brought out to India. The use of the East India Company's foolscap paper suggests the probability of the work having been written in India, and if so it must have been by a son or a relative of his. I learn from Mr. Bayley that a Mr. N. J. Halhed entered the Civil Service in 1804. "In 1807 he was an assistant to the Judge and Magistrate of Meerut; in 1808 Assistant to the Magistrate of the 24-Pergunnahs; and in 1812, Assistant Judge of Burdwan, where he remained till 1814. He then went to Pooree, in

1815, and to Agra at the end of that year; thence to Murálábád in 1820; and to Calcutta in 1827 as (officiating supernumerary) member of the lower Board of Revenue. He became Commissioner of Revenue and Circuit for Arracan in 1827, and entered the Sudder Court in 1836. He died in August 1838." He was possibly a son of the elder Halhed, and the author of the translation, and somebody to whom the name of the elder was familiar by mistake addressed him N. B. instead of N. J. It is more probable, however, that the elder was the translator, whose work was sent out to the son for some comparison or other.* This appears the more likely, as Sir Charles Wilkins was in the India House at the time when the translation was made, and his Persian MS. which supplied the text, must have been in England.† At any rate that the MS. is the work of a Halhed may be taken for granted. I must confess that this opinion is based on the suppositions, 1st, that the private letters were addressed to the translator and his wife, and, 2nd, that the syllable Hal and Halh on those letters are remnants of Halhed and not of any other name beginning with the syllable Hal or Halh; and if a conjecture founded on such data be not admissible, I must leave to others the task of tracing the author of our MS. which must for the present remain a literary foundling.

The receipt of the following communications were announced—

9. From W. Herschel, Esq. through Mr. A. Grote.

"Description of a Hindu Temple converted into a mosque at Gageneshwar, zillah Midnapore."

10. From W. T. Blanford, Esq. "Contributions to Indian Malacology, No. 9."

* I have lately had an opportunity, through the kindness of Mr. Grote, of examining, in the Record Room of the Board of Revenue, two minutes by Mr. N. J. Halhed, bearing dates the 1st and 8th June 1827, respectively. They are in the hand writing of a copyist; but they contain the signature of and many corrections both in pen and pencil by Mr. Halhed, and the style in which they are written is quite different from that of our MS.

† The date of some of the paper used in the MS. is in favor of this supposition. Some of the earlier sheets were written in June 1810, on paper which had been manufactured in 1809, but which could not, in the olden days of slow-sailing Indiamen, be available in India at that time, though it would be easily accessible at the India House.

SANSKRIT MANUSCRIPTS PURCHASED AT BENARES.

| सङ्ख्याः | ग्रन्थानां नामानि | ग्रन्थकारनामानि | अक्षरभेदाः | पत्रसङ्ख्याः |
|----------|------------------------------------|-------------------|------------|--------------|
| १००१ | तत्त्वदीपिका टीकासहिता | श्रीवत्सभः | ना० | १३१ |
| १००२ | भेदाधिकारसत्क्रिया | | | |
| | भेदाधिकारटीका.... | नारायणमिश्रः | ना० | ६३ |
| १००३ | सोमप्रयोगः | | ना० | ५८ |
| १००४ | स्मृतिचरणं (पूर्वार्द्धम्) | | ना० | १०८ |
| १००५ | अतिरात्रः | | ना० | २० |
| १००६ | अनुमानदीधितिव्याख्या | | | |
| | २४ पत्रात् परं खण्डिता.. | भवानन्दः.... | ना० | ३८५ |
| १००७ | ब्रह्मयामलतन्त्रम् | महाभैरवः ... | ना० | १२० |
| १००८ | पञ्चपादिका (शेषे खण्डिता) | | ना० | ६४ |
| १००९ | माध्यन्दिनोपनिषद्भाष्यम् | | | |
| | (शेषे खण्डितम्) .. | वासुदेवब्रह्म .. | ना० | ११८ |
| १०१० | भाट्टदीपिकाप्रभावली .. | शम्भुभट्टः .. | ना० | ८१ |
| १०११ | विष्णुयागपद्धतिः | अनन्तदेवः .. | ना० | २८ |
| १०१२ | ऐतरेयब्राह्मणभाष्यम् .. | सायनाचार्यः | ना० | ५५९ |
| १०१३ | आद्भचन्द्रिका | वैद्यनाथः .. | ना० | ६३ |
| १०१४ | विशेष्यतावच्छेदकप्रकारक- .. | | | |
| | ज्ञानकारणत्वविचारः.. .. . | | ना० | ९० |
| १०१५ | शेषार्थ्या सटीका... .. | शेषकर्तृकं मूलम् | | |
| | | राघवानन्दोया टीका | ना० | ४५ |
| १०१६ | कुण्डनिर्माणश्लोकविवृतिः | रामवाजपेयी | ना० | ३८ |
| १०१७ | दमयन्तीकथा (खण्डिता).. | भर्तृहरिः .. | ना० | ३९ |

सङ्ख्याः ग्रन्थानां नामानि ग्रन्थकारनामानि अक्षरभेदाः पत्रसङ्ख्याः

१०१८ प्रायश्चित्तकुतूहलः, अनुक्रम-

शिकासहितः रघुनाथभट्टः ना० १०१

१०१९ आचारदीपः नागदेवोपाध्यायः ना० ७२

१०२० हेतुतावादः.. .. ना० २६

१०२१ षड्विंशब्राह्मणः ना० ३८

१०२२ तत्त्वदीपप्रकाशावरणभङ्गे

शास्त्रार्थप्रकरणम् .. पीताम्बरः .. ना० १२४

“ तत्त्वदीपप्रकाशावरणभङ्गे

सर्वनिर्णयप्रकरणम् .. पुष्पोत्तमः .. ना० ६२

१०२३ पूर्वकमलाकरः (खण्डितः ६८ परं) कमलाकरभट्टः ना० १२५

१०२४ तर्कसमयखण्डनः वेणीदत्तः .. ना० ८

१०२५ तन्त्रगन्धर्वः महादेवः .. ना० ८६

१०२६ बौधायनचयनसूत्रम् .. बौधायनः ... ना० २३

१०२७ सर्वसङ्ग्रहवाक्यम्.. .. ना० ३५

१०२८ प्रासादशिवप्रतिष्ठाधिकारः कमलाकरभट्टः ना० ६१

१०२९ सप्तहोत्रप्रयोगः, आम्बिष्टोमीयः.. .. ना० १०१

१०३० आप्तार्थ्यामः.. .. ना० २३

१०३१ वंशब्राह्मणः.. .. ना० ८

१०३२ शब्दप्रमाणविचारः (खण्डितः).. .. ना० ३३

१०३३ भवानन्दीत्याख्या, व्यतिरेकिपर्यन्ता महादेवः ना० ३७२

१०३४ कालतत्त्वविवेचनम् ... रघुनाथभट्टः ना० १२३

१०३५ कल्पकारिकासारः .. मयूरवाहः .. ना० ४७

१०३६ काम्येष्टिखिला ना० ५०

१०३७ स्मार्त्तनिष्कृतिपद्धतिः .. दिवाकरः .. ना० ३६

१०३८ प्रायश्चित्तश्लोकपद्धतिः ना० ७७

१०३९ गायत्रीपुरश्चरणप्रयोगः.. शम्भुभट्टः .. ना० ७

| सङ्ख्या | ग्रन्थानां नामानि | ग्रन्थकारनामानि | अक्षरभेदाः | पत्रसङ्ख्या |
|---------|--|------------------------|------------|-------------|
| १०४० | त्रिभाष्यरत्नः | ना० | ८२ | |
| १०४१ | विवरणप्रमेयसङ्ग्रहः (शेषे खण्डितः) | ना० | १२४ | |
| १०४२ | नव्यमतवादायः | ना० | १० | |
| १०४३ | अनुमितिपरामर्शहेतु- हेतुमद्भावविचारः हरिरामतर्कालङ्कारः | ना० | ५६ | |
| १०४४ | स्मृतिसंस्कारवादः | ना० | १३ | |
| १०४५ | अनुमितिविचारः | ना० | ३३ | |
| १०४६ | अद्वैतमकरन्दः | ना० | २६ | |
| १०४७ | प्रायश्चित्तसदोदयः | सदारामः | ना० | ३८ |
| १०४८ | गायत्रम् गवामयनीयम् | ना० | ३१ | |
| १०४९ | सामविधानम् | ना० | २४ | |
| १०५० | आत्मबोधः | शङ्कराचार्यः | ना० | ४० |
| १०५१ | आरुणकेतुकीप्रयोगः | रामचन्द्रयन्त्रा | ना० | ७६ |
| १०५२ | संशयानुमितिविचारः (खण्डितः) | हरिरामभट्टा- चार्यः | ना० | १७ |
| १०५३ | अनुमितिपरामर्शवादः | रघुदेवभट्टाचार्यः | ना० | १५ |
| १०५४ | अनुमितिपरामर्शविवेकः | ना० | २६ | |
| १०५५ | आहिताग्निप्रेताधानप्रयोगः | आम्बलायनः | ना० | ११ |
| १०५६ | बृहस्पतिशान्तिः, संस्कार- कौस्तुभोक्ता | ना० | ५ | |
| १०५७ | आपस्तम्बसूत्रध्वनिता | भास्करमिश्रः | ना० | ३६, २३ |
| १०५८ | विवरणोपन्यासः | ना० | ७१ | |
| १०५९ | कोटिहोमप्रयोगः | रामकृष्णभट्टः | ना० | ८० |
| २०६० | अनुयागपद्धतिः, वा पुण्याह- वाचनादिप्रयोगः | आनन्दतीर्थः | ना० | १०५ |
| १०६१ | इतरवादः | ना० | ३ | |

- सङ्ख्याः ग्रन्थानां नामानि ग्रन्थकारनामानि अक्षरभेदाः पत्रभङ्गाः
- १०६२ बौधायनसोमसूत्रम् बौधायनः . . ना० ५६
- १०६३ अनेकार्थवृत्तिः (आद्ये श्रेष्ठे च खण्डिता) ना० १८५
- १०६४ महाभिसर्वस्वः वासुदेवदीक्षितः ना० १०६
- १०६५ लीलावत्युदाहरणे श्रेष्ठी-
व्यवहारः वीरेश्वरः . . ना० २७
- “ लीलावत्युदाहरणे अङ्ग-
व्यवहारः छापारामः . . ना० ८०
- १०६६ गृह्यसूत्रम् आश्वलायनः . . ना० ४४
- १०६७ शिवसहस्रनाम भट्टश्रीहरिनाथः ना० १०६
- १०६८ वृत्तिवार्त्तिकम् ना० १२
- १०६९ परामर्शवादः ना० ५०
- १०७० कौशीतकीब्राह्मणोपनिषत् शङ्करानन्दः . . ना० ७४
- १०७१ मीमांसावार्त्तिकम् कुमारिलभट्टः ना० ३६
- १०७२ प्रायश्चित्तसारसङ्ग्रहः नागोजीभट्टः . . ना० ६७
- १०७३ लाट्यायनसूत्रम् ना० ११७
- १०७४ परामर्शहेतुतावादः महादेवपण्डितः ना० ८७
- १०७५ अमरकोशः, प्रथमकाण्डः
दीरखामिटीकासहितः अमरसिंहः . . ना० ४६
- १०७६ वागीभूषणः दामोदरः . . ना० १६
- १०७७ आपत्तम्बसूत्रवृत्तिः
(श्रेष्ठे खण्डिता) भट्टरत्नदत्तः . . ना० २६, ६६
- १०७८ विद्याविलासः (श्रेष्ठे खण्डितः) ना० २६
- १०७९ सिद्धान्तरहस्यः मथुरानाथ-
तर्कवागीशः ना० ३६२
- १०८० सम्प्रदायप्रदीपः गदाधरपण्डितः ना० ५७

| सङ्ख्याः | ग्रन्थानां नामानि | ग्रन्थकारनामानि | अक्षरभेदाः | पत्रसङ्ख्याः |
|----------|---|--------------------|------------|--------------|
| १०८१ | सन्निकर्षवादः (खण्डितः) | ना० | २१ | |
| १०८२ | नव्यमतविचारः | ना० | ४२ | |
| १०८३ | न्यायसिद्धान्तदीपः (खण्डितः) शशधरः .. | ना० | ३६ | |
| १०८४ | बौधायनसूत्रभाष्यम् .. | सिद्धनाथः | ना० | १०६ |
| १०८५ | प्रातिशाख्यम् | सौनकाः .. | ना० | ३४ |
| १०८६ | महाव्रतम् | ना० | ६६ | |
| १०८७ | वर्षद्वयम्, कृत्यमहार्णवीयम् श्रीहरिनारायणः | ना० | १५३ | |
| १०८८ | अपूर्ववादः | ना० | १८ | |
| १०८९ | अवधूतगीता | दत्तात्रेयः .. | ना० | २० |
| १०९० | दशगायत्रपद्धतिः (श्रेष्ठे खण्डिता) रामकृष्णभट्टः | ना० | ३६ | |
| १०९१ | सप्तहोत्रम् | ना० | ५७ | |
| १०९२ | सुबोधिनीभाष्यम् (श्रेष्ठे खण्डितं) | ना० | ३५ | |
| १०९३ | आश्वलायनगृह्यपरिशिष्टः | ना० | २७ | |
| १०९४ | अमृतविन्दुः | चन्द्रः | ना० | ४६ |
| १०९५ | शुक्लटीका (आपस्तम्बसूत्रटीका) कारविन्दखामी | ना० | ११५ | |
| १०९६ | लाट्यायनसूत्रभाष्यम् | अग्निखामी .. | ना० | ३१५ |
| १०९७ | अवमानखण्डालोकः (खण्डितः पूर्वं) | जयदेवमिश्रः | ना० | ३३२ |
| १०९८ | प्रयोगरत्नः | नारायणभट्टः | ना० | १६६ |
| १०९९ | आशौचसङ्ग्रहः ॥ त्रिंशच्छ्लोकी ॥ पुस्तकद्वयम् । सटीकम् । निष्ठीकश्च | ना० | ८, २६ | |
| ११०० | वाजपेयहोत्रः (आदौ खण्डितः) महाव्रतहोत्रः (श्रेष्ठे खण्डितः) | ना० | १८, ४६ | |
| ११०१ | मण्डपकुण्डसिद्धिः | विठ्ठलदीक्षितः | ना० | २७ |
| ११०२ | सूत्रमुक्तावली | ब्रह्मानन्दसरस्वती | ना० | ६ |
| ११०३ | द्वादशाहहोत्रः | रघुनाथः .. | ना० | १७८ |

| | | | | |
|-----------|--|-----------------|-------------------|--------------|
| सङ्ग्राहः | ग्रन्थानां नामानि | ग्रन्थकारनामानि | अक्षरभेदाः | पत्रसङ्ख्याः |
| ११०४ | पशुको मैत्रावरुणप्रयोगः | ... | ... | ना० १५ |
| ११०५ | प्रयोगदर्पणः (शेषे खण्डितः) | नारायणदीक्षितः | ना० | ८६ |
| ११०६ | ज्योतिषोमाग्निषोमादिपञ्चतिः | रामछायाः | ना० | ६८ |
| ११०७ | मैत्रावरुणम् (आग्निषोमीयम्) | ... | ना० | २४ |
| ११०८ | काशिकावृत्तिः (तत्र ७ अध्यायः खण्डितः, ४, ८ अध्यायौ नृत्तः) | वामनः | ना० | ४०० |
| क११०९ | ऐतरेयब्राह्मणपञ्चिका | ... | ना० | ३७ |
| ख११०९ | ऐ० ब्राह्मण-द्वितीयपञ्चिका | ... | ना० | ४३ |
| ग११०९ | ऐ० ब्राह्मण-तृतीयपञ्चिका | ... | ना० | ४४ |
| घ११०९ | ऐ० ब्राह्मण-चतुर्थपञ्चिका | ... | ना० | ३४ |
| ङ११०९ | ऐ० ब्राह्मण-पञ्चमपञ्चिका | ... | ना० | ४५ |
| च११०९ | ऐ० ब्राह्मण-षष्ठपञ्चिका | ... | ना० | ३६ |
| क११०९ | ऐ० ब्राह्मण-सप्तमपञ्चिका | ... | ना० | ३४ |
| ज११०९ | ऐ० ब्राह्मण-अष्टमपञ्चिका | ... | ना० | ३२ |
| १११० | हव्यन्भाष्यम् (खण्डितम्) | सायनाचार्यः | ना० | १६२ |
| ११११ | प्रयोगरत्नः | ... | नारायणवाजपेयी | ना० १२० |
| १११२ | कुन्दोगप्रायश्चित्तम् | ... | ना० | ६ |
| १११३ | कुण्डमार्तण्डः (सटीकः) | ... | अनन्तदैवज्ञः | ना० ५४ |
| १११४ | सारसङ्ग्रहः | ... | वरदराजः | ना० ७२ |
| १११५ | हरितत्त्वमुक्तावलीटीका | ... | स्वयम्भकाशः | ना० ७६ |
| १११६ | आश्वलायनकारिकाविवरणम् | ... | नारायणः | ना० २५१ |
| १११७ | इष्टकापूरणभाष्यम् | ... | कर्कोटी | ना० १७ |
| १११८ | गृह्यकारिका | ... | भट्टकुमारिलस्वामी | ना० ७६ |
| क१११८ | उद्भगानम् | ... | ना० | १६० |
| ख१११८ | तैत्तिरीयारण्यकम् | ... | ना० | १५० |
| १११९ | निर्भलखितादीनि चूडस्तोत्रादीनि | ... | ना० | १११ |

धन्यानां नामानि

सङ्ग्रहश्लोकाः (प्रथमपत्रं नास्ति)

अवधूतस्तोत्रम्

निरञ्जनाष्टकम्

अच्युताष्टकम्

निर्वाणाष्टकस्तोत्रम्

निर्वाणदशकस्तोत्रम्

हस्तामलकस्तोत्रम्

कौपीनपञ्चकम्

आत्मपञ्चकम्

दक्षिणामूर्तिस्तोत्रम्

लक्ष्मीनृसिंहस्तोत्रम्

द्वादशपञ्जरस्तोत्रम्

लघुवाक्यवृत्तिः

स्वरूपानुसन्धानस्तोत्रम्

महावाक्यसिद्धान्तस्तोत्रम् । अस्मिन् स्तोत्रे (१६-१७)

पत्रयोरभावः ।

दशावतारस्तोत्रम्

आर्त्तत्राणस्तोत्रम्

गङ्गाधराष्टकम्

अवधूतगीता १ प्रकरणम्

आनन्दलहरी

आत्मानात्मविवेकः

विष्णुसन्बोधनस्तोत्रम्

आत्मविचारः

सोपानपञ्चरत्नमालास्तोत्रम् शङ्कराचार्यः

धन्याष्टकस्तोत्रम्

धन्यानां नामानि धन्यकारनामानि
 शिवपञ्चाक्षरस्तोत्रम्
 मानसपूजा
 गङ्गाष्टकम्
 मणिकर्णिकास्तोत्रम्
 ध्यानन्दलहरी
 चरित्तत्त्वमुक्तावली । (अत्र पञ्चत्रयाभावः)
 गोविन्दाष्टकम्
 शुकाष्टकम् शुक्लामी
 पञ्चायुधस्तोत्रम् शङ्कराचार्यः
 मनीषापञ्चकस्तोत्रम्
 भुजङ्गप्रयातस्तोत्रम्
 गुरोरष्टकम्
 ब्रह्मनामावलीस्तोत्रम्
 महाराष्ट्रभाषायाम् ।

१११६क अनुमानार्थः ।

निद्रावृत्तिचा अर्थः ।*

यमदमादिविचारतपशीलः ।

त्रिविधसमाधिः ।

निर्विकल्पसमाधिः ।

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR FEBRUARY, 1868.

The monthly general meeting of the Asiatic Society was held on Wednesday the 5th February, 1868 at 9 P. M.

The Hon'ble J. B. Phear, Vice-President, in the chair.

The minutes of the last meeting were read and confirmed.

The following presentations were announced—

From Dr. J. Fayerer; copy of a lecture by M. Garcin de Tassy; *Cours D'Hindoustani (Urdu et Hindi) à l'école impérial et Spécial des Langues Orientales Vivantes.*

From Col. J. T. Walker, Superintendent of the Great Trigonometrical Survey of India; five copies of Nautical Almanac Circular, No. 11, of the Path of the total phase of the Solar eclipse, August 17—18, 1868, between Aden and Torres Straits.

From H. A. Mangles, Esq., through A. Grote, Esq.; a fragment of a stone hatchet, (Neolithic type,) found six miles north of Mercara in Coorg, on the crest of a hill.

Mr. Blanford remarked that this was the first time (to his knowledge) that any specimen of the polished or Neolithic type of stone hatchet had been met with in Southern India. Numerous Celts of the same type had been found in Bundelkand by Mr. Lemesurier and Mr. Theobald, and a fine series of these specimens had been presented by the former gentleman to the Society's Museum and figured in the Society's Journal, Vol. XXXI. p. 327. Stone celts of the chipped or Palæolithic type, similar to those of the Amiens gravels, had been found by Messrs. Foote and King in the Carnatic, and in September last a number of specimens from other parts of India were exhibited at the meeting of the Society. But hatchets of the type now before the meeting had been found

hitherto only in Bundelkund. It was probably owing to want of proper search, that they had not previously been met with elsewhere; for there could be no question that the hills and plains of Southern India had been occupied by man in a very early stage of development, and, in addition to the chipped hatchets, kist-vaens, cromlechs, and stone rings, some of an early iron age, but some probably of earlier date, were common both in the hill regions and the plains of India. It was noteworthy that there is no trace of a bronze age in India; the iron age appears to have immediately succeeded that of stone; but the various antiquities have as yet hardly been correlated sufficiently, to enable us to distinguish one of the iron period from one of the stone age.

From H. Blochmann, Esq.; a copy of a treatise on the Rubái, entitled *Risalah i Taranah*.

From A. Grote, Esq.; copies of Proceedings and publications of the Scientific Society of Aligurh.

The Council reported that they have nominated the following gentlemen to serve in the several Committees in the ensuing year.

Finance.

Dr. S. B. Partridge.

A. Mackenzie, Esq.

Philology.

Major W. N. Lees.

A. Grote, Esq.

H. Blochmann, Esq.

The Rev. J. Long.

Moulavi Abdool Luteef Khan Bahadur.

E. C. Bayley, Esq.

Library.

A. Grote, Esq.

Major W. N. Lees.

Dr. T. Anderson.

H. B. Medlicott, Esq.

W. S. Atkinson, Esq.

Kumar Hurendrakrishna Bahadur.

H. Blochmann, Esq.

The Hon'ble J. B. Phear.

Natural History.

Dr. J. Fayrer.
Dr. T. Anderson.
Dr. S. B. Partridge.
V. Ball, Esq.
Dr. J. Ewart.
The Hon'ble J. P. Norman.
W. S. Atkinson, Esq.
H. B. Medlicott, Esq.
A. Grote, Esq.
Babu Debendra Mullick.

Meteorological and Physical Science.

Col. J. E. Gastrell.
Captain J. P. Basevi.
Dr. S. B. Partridge.
Lient. Col. J. T. Walker.
D. Waldie, Esq.

Coin Committee.

Major W. N. Lees.
A. Grote, Esq.
Captain F. W. Stubbs.
E. C. Bayley, Esq.

Committee of Papers.

All the members of the Council.

Statistical Committee.

Dr. J. Ewart.
C. B. Garrett, Esq.
Lient.-Col. J. T. Walker.
The Hon'ble J. B. Phear.

*Ethnological Committee.**Linguistic Section.*

Rájendralála Mitra, Esq.
The Hon'ble W. Markby.
H. Blochmann, Esq.
Major W. N. Lees.
J. Beames, Esq.
Dr. John Anderson.

Physical Section.

A. Grote, Esq.

Dr. S. B. Partridge.

Dr. J. Ewart.

Dr. J. Anderson, Secy.

The following gentlemen, proposed as ordinary members at the last meeting, were ballotted for and duly elected.

Major Edgar Clark.

John Kavenagh, Esq.

L. H. Lees, Esq. M. D.

G. Robb, Esq.

The Council recommended the following alterations in the Rules of the Society ; viz,—

That to rule 13,* the words "nor shall his name be entered on the member roll" be inserted after the words "entitled to vote."

To rule 43 the following words be added, "Six weeks from the date of issuing the voting papers, being allowed for that purpose."

To rule 64, the following words to be added :—"But no case which involves a change of the rules of the Society, shall be declared urgent under this rule."

After some discussion it was proposed by Mr. J. Beames that the words "two months" be substituted for "six weeks" in rule 43.

Mr. Bourke seconded the amendment, which was put to the vote and carried by a large majority.

On the recommendation of the Council, the following gentlemen were ballotted for and elected Honorary members of the Society.

Dr. T. Thomson, F. R. S.

Genl. A. Cunningham.

Profr. Bapu Deva Sastri.

And the following gentlemen were balloted for and elected Corresponding members of the Society.

Profr. Holmboe of Christiania.

Mons: F. H. Foucaux, Professor of Sanskrit, College de France, Paris.

The Secretary then read the following note from F. S. Growse, Esq. on the village of Paindhat, in the district of Mainpuri.

* Not rule 43, as erroneously reported in the January Proceedings.

"The village of Painḍhat in the Mustafabad Pargana of the Mainpuri district, is a Hindu *tirtha* of something more than local repute, since it attracts devotees at the yearly festival from places so far distant as Pilibhit and Kantipur. The principal shrine is of no great antiquity and possesses no architectural merit. The original building is said to have been erected in commemoration of the eponymous hero of the village, Painḍhat or Pánduvansi, who fell on that spot, fighting in behalf of Prithivi Ráj against Jaya Chand the king of Kanauj. In all probability some mention of this warrior and his exploits would be found in the poem of Chand Bardail; but this is a work of which I have not yet succeeded in procuring a copy. No doubt the Asiatic Society includes many students of early Hindi literature, some one of whom will kindly oblige me with information on the subject.

On the other side of the village is another shrine, affected chiefly by Bhangis and Dhánuks, who, at the yearly festival, offer sacrifices of young pigs before the presiding deity, who is worshipped under the name of Jagaiya. The temple itself though a neat little building is quite modern. The sculpture, however, which it has been erected to preserve is of considerable interest and antiquity, being a fine large figure of Buddh seated on a singhásan with elephants and other carved accessories. This must at one time have adorned a Buddhist temple of considerable size and pretensions; and therefore, if the tradition is correct, which derives the present name of the village from a hero in the time of Prithivi Ráj, it will be of much archæological interest to ascertain what is the name by which Chand calls it. Possibly an important historical site may thus be identified.

Considering the large amount of topographical information which it may reasonably be supposed lies embedded in the Prithivirájás, I think a critical edition of the work, though it is in Hindi and not Sanskrit, would be an undertaking by no means derogatory from the dignity of the Asiatic Society.

Mainpuri, December 30th, 1867.

F. S. Growse.

Mr. Long observed that he had noticed, some time since, the existence of a copy of Chand's poems in St. John's College, Agra, to which it had been presented by the Jyepoor Rajah. He had proposed that it should be applied for, for examination by the Society; and if thought desirable, published.

Mr. Beames said that if it were decided to publish the poems, he should be happy to undertake the editing of the work.

The Secretary read the following letter to the Principal of the Agra College, which had been written in consequence of Mr. Long's motion, together with the reply.

No. 60.

To the Principal of the Agra College, Agra.

Asiatic Society's Room, Calcutta, 28th January, 1867.

SIR,—The Rev. J Long having brought to the notice of the Asiatic Society that there is a MS. of the Poems of Chand in the Library of the Agra College, I am directed to request you will be good enough to allow the Council the loan of that work for a few days, in order that it may be examined, and an analysis of its contents prepared by the Philological Committee of the Society. Every care will be taken of the book while in the possession of the Society, and it will be returned to you by an early opportunity.

I have, &c. &c.

(Sd.) RAJENDRA LALA MITRA,
Secy. As. Society.

No. 318 of the 1867-68.

From the Principal, Government College, Agra.

To the Secretary, Asiatic Society, Philological Department, Calcutta.

SIR,—Your letter No. 60, dated 28th January last, to which you call attention in No. 20, of 22nd January, 1868, has never reached this office.

The Manuscript, which you wish to borrow, is so valuable a one, that without the authority of the Government N. W. P. I should not like to trust it to the railway for transmission.

I have, &c.

(Signed) H. DEIGHTON,
Principal, Government College.

Agra College, the 30th January, 1868.

Mr. Long then proposed that the Government N. W. P. be asked to appoint a scholar to give a full report upon the copy of Chand Bardi's poems in the Agra College, and to permit a copy to be made for the Society.

The proposition was seconded by Mr. E. C. Bayley and unanimously agreed to.

The following extract of a letter from W. T. Blanford, Esq. being Natural History Notes made on his voyage to Abyssinia then was read.

Mr. Blanford writes from Aden, on the 16th December—

"We came in here on Saturday night (14th) having come across from Bombay in 10 days and 9 hours, a very fair passage. We were going too fast at first for a towing net, and all I made, for some time, were carried away. At last I got one to work made of bunting, and when we were going 8 knots instead of nine or ten, I managed to make a fair haul. I got 3 species of *Janthina*; 2 of *Hyalaea*; *Styliola* of course, but not abundantly; one or two small specimens of *Glaucus*; a small *Atlanta*, and plenty of *Porpita* and *Velutella*. But the greatest catch was an extremely minute species of Forbes's genus *Cheletropis*, which is not a Pteropod, but I really don't know what it is. The species is almost as minute as *Opisthostoma*; so examining the animal with a lens was not easy; but it has some most curious ciliated mantel processes, the cilia being constantly in such rapid motion, that I thought at first these were rotifers adhering to the peristome.* I got two species of *Litiopa* and several *Crustacea*; crabs, *Stomapoda* and *Copepoda*; besides several small fish. The only bird was a night-jar, which got away again, and a peregrine falcon which settled in the rigging, and I bowled him over.

I have been climbing the hills this morning, (it is actually cool here!) and am astonished at the resemblance of the rocks to the Deccan traps; allowing of course for chemical changes, and the filling up of the vesicles (in the lavas). I am more than ever convinced that the Deccan traps are simply lava flows and ash beds. I have never had a turn at undoubted Volcanic rocks since I have been at work in Bombay.

I have found two land shells here. One is *Bulimus pullus*; the other, another *Bulimus* of the same section, very near *B. Sindicus*.

A second letter dated 7th January, and written from Loullu says—

"I landed on the 24th. I have not been up to Senafé yet, but hope to go off in a day or two, * *. I have not been out much, except to

* The animal of this genus had been described by Mr. J. D. Macdonald; and shewn to belong to the *Heteropodous* family *Macgillioragüda*. The name *Cheletropis* is also to be changed to the prior name *Simesigera* Dbil. See Appendix to Adams' "Genera of Recent shells." Vol. ii. p. 613.—Ed.

Hadooda and across the bay. Geology not very interesting. The camp is on the delta of the Hadass and stands a good chance of being swept away in the rains.

"I am getting a few skins, but only one of my collectors is here. I am obliged to take flat skins of the larger mammals chiefly, but I hope to have some fit for mounting. I must try to get a good pair of the Wast-hog (*Phacocheirus*) which, rather to my surprise, abounds here. I killed a fine fellow last Sunday, but it was too far off to carry him in, entire. I secured his head however. He showed no fight. There is a largish antelope about, rather larger than black buck, both sexes horned; a species of *Gazella* in the more extended meaning of the word. However, I must write to you about the fauna hereafter."

The following correspondence with Colonel H. L. Thullier, regarding the errors of the observations recorded at the Government Observatory during the late cyclone was read.

No. 775.

To Col. H. L. THULLIER, Surveyor General of India.

Asiatic Society, Rooms, Calcutta, 26th November, 1867.

SIR,—In accordance with a resolution of the Asiatic Society, adopted at the ordinary general meeting held on the 6th Nov., I have the honor to draw your attention to the grave discrepancy of the barometric and rain gauge observations for the night of the 1st and 2nd November, published by the officer in charge of your observatory, and those recorded and published by M. Lafont and others. These discrepancies are so great, as not to be explicable by any slight differences of the instruments employed; and that they are not so in the case of the barometric observations, is proved by the fact, that up to 0h. 20m. of the 2nd November, (at which time the 10 minute observations recorded at your observatory, suddenly ceased,) the pressure curve indicated by the observatory barometer and that of M. Lafont, coincide as closely as those of any two barometers, observed by different persons, at slightly different intervals, could be expected to do under any circumstances.

It is after 0h. 20m. that the great discrepancy above mentioned commences, and while the hourly observations of the observatory barometer indicate a lower minimum than in the cyclone of 1864, viz. 28.554, M. Lafont's observations shew a minimum of 28.686 only,

and the barometer of the Durham, (as observed half an hour later,) one of 28·784 reduced. The curve of the Durham barometer and that of M. Lafont's coincide closely throughout, while that of the observatory ranges much below either up to 8 o'clock; when it rises suddenly to a higher point than either of the above.

This coincidence of two independent barometers leads the Society to think it probable that the observatory record has been vitiated by some unexplained error; an idea which is strengthened by the fact that all the barometric observations made in or near Calcutta, that have been published, shew a minimum range much less than that of the cyclone of 1864.

It cannot be doubted that the rainfall for the height of the 1st and 2nd is erroneously reported as 2·74 inches. No one who experienced the cyclone could reasonably suppose so small a fall, or could doubt that M. Lafont's register of 6·78 inches must be much nearer the truth. The Anemometer is stated to have been blown away before the wind reached its greatest violence, but the register of the rainfall is that indicated by the anemometer gauge. The question cannot fail to present itself to any reflective mind;—'Were the indications of the rain gauge in no degree vitiated by the destruction of a large part of the recording instrument?'

Finally, I am requested to solicit an investigation into the causes that led to the destruction of the anemometer, an accident greatly to be regretted, as in neither of the two violent cyclones which have visited Calcutta within last four years, has the maximum pressure of the wind been recorded, and a datum of very great importance both in its economic and scientific bearings has been irretrievably lost. The Society trust that if on investigation it be found that the cause of destruction has been due to any oversight in the erection of the instrument, the same may be carefully avoided in refixing it. But if inseparable from the principle of the anemometer employed, that a form may be selected capable of resisting and recording the pressure, even of a more violent cyclone than that now in question.

I have &c.,

(Signed) H. F. BLANFORD,
Secy. As. Soc. Bengal.

To the Secretary to the Asiatic Society of Bengal.

Sir,—In reply to your letter No. 775 dated the 26th ultimo, I have the honor to forward, for the information of the Asiatic Society, copies of letters from Babu Gopeenautha Sen, the Officiating Superintendent of the Observatory, as per margin, regarding the meteorological observations taken at this

No. 48, dated 12th instant.

No. 46, dated 3rd instant.

office on the night of the 1st and morning of the 2nd November, during the prevalence of the cyclone which passed over the metropolis.

2. Nobody can regret more than I do, the semblance of imperfections in important observations of this nature at such a critical time. The Officiating Superintendent of the Observatory, Babu Gopeenautha Sen, is very positive as to the fact of the Barometric pressure having been observed hourly, from midnight of the 1st until daylight of the 2nd November. The ten minute observations which had been commenced at the first indications of the storm, were necessarily stopped after 0h. 20m. on the 2nd, but from all the evidence I can collect, I fear that, owing to the fury of the storm, and the absence of the officer in charge, who does not reside in the premises, and who failed to appreciate the importance of the occasion or to shew any zeal and energy in the cause, even the hourly observations cannot implicitly be relied on between the hours noted, on the morning in question; dependent as they are on the *ipse dixit* of a very subordinate native observer.

3. This may be partly attributed to the exposed position of our Meteorological shed, where the Barometer and Thermometers are fixed. I was not present at Calcutta myself, but the Deputy Surveyor General, who was then in charge of my office, considers that it was almost impracticable for a native observer to withstand the cyclone during those hours, or at all events to read off the observations with sufficient accuracy or confidence, to warrant the belief in their absolute correctness. Had the duties been under competent European supervision, I dare say the result would have been different. It is generally supposed that we have an "observatory" in Calcutta: this popular error has been of long standing. In point of fact, we have no observatory at all, but merely prosecute such observations at the Surveyor Gene-

ral's Office, in the best way possible with inadequate means; and it has long been a source of the greatest anxiety to me.

4. The circumstances under which the Anemometer was destroyed, can easily be explained to the Society, or to the Council on a personal visit to the observatory. It is not possible to convey an adequate idea on paper, but I may observe that in spite of several additional fastenings to the wind gage subsequent to the former cyclone of 1864, the whole of it, together with the leaden roofing of the observatory, was blown clean away. Every precaution was taken, but with such cyclones of unprecedented violence nothing is safe. Different arrangements will now be tried and duplicate instruments put up.

5. The main object of these observations was however secured, and ample notice was furnished to the Master Attendant as well as to the Meteorological Reporter to the Government of Bengal, by the Officiating Superintendent of the Observatory; but on such important emergencies it appears to me very desirable that the Meteorological Reporter should have the means of watching the rise and depression of the mercurial column, and note the curve himself.

6. It is gratifying to observe the great interest taken by the meeting of the Asiatic Society in the Meteorological Observations, the results of which I have for so many years rendered to them for insertion in their journal. The state of these observations, and the agency necessary for the purpose, were prominently brought to the notice of the Government of India in 1864, to the effect quoted in the

* "That if it is intended to carry out the project for systematic Meteorological observations in the most complete and perfect way, it is necessary to appoint a officer of high scientific attainments for the general arrangements and supervision of the whole undertaking; the Meteorological observatory to be entirely detached from the Surveyor General's office and placed with the Superintendent of Meteorological observations"—

scientific purposes, and the subject will again be urged on the consideration of Government, in the hope of some speedy change being made.

7. The subject of the observations recorded during the cyclone, having been entered into more in detail with Mr. Blanford the Meteo-

margin,* and remedial measures most urgently recommended, but I regret to say without effect. It is obvious that native superintendence alone, and so trifling a native establishment for carrying out hourly observations night and day, are totally inadequate for

rological Reporter to the Government of Bengal, I have no doubt that gentleman, as he likewise fills the place of Secretary to the Society, will be able to furnish any further information which may be required.

I have &c.,
(Signed) H. L. THUILLIER,
Surveyor General of India.

Surveyor Genl.'s Office, Calcutta, 12th Dec., 1867.

No. 48.

From BABU GOPEENATHA SEN, in charge of the Observatory.

To COL. H. L. THUILLIER, Surveyor Genl. of India.

SIR,—With reference to your memo. No. 1642, dated 3rd instant, forwarding for explanation a letter from the Secretary to the Asiatic Society, No. 775, dated 26th ultimo, anent the subject of the Meteorological observations at this office, during the night of the cyclone of 1st and 2nd November, I beg leave to refer you to my letter of the 3rd December, No. 46, wherein, I believe, I have fully explained all the points mooted in paras. 1 to 4 of the Secretary's letter.

With regard to the 5th para. relating to the Anemometer of this office, I beg to state that shortly after the cyclone of 1864, the instrument was put up on the observatory roof with six supports instead of three as before, with a view that the current of wind may act freely on it. The fixing of the instrument was done under the direction of the Deputy Surveyor General, Col. Gastrell, and the Secretary to the Meteorological Committee, Mr. Blanford. [vide the Cyclone Report of 1864.]

The cause of the destruction of the Anemometer may be attributed to the leaden sheets on the observatory roof having rolled up and blown against the supports of the said instrument. I need hardly state that at the time of putting these sheets up, every precaution was taken by the builders, Messrs. Mackintosh, Burn & Co., to prevent their giving way to the force of a storm or gale.

I would venture to suggest, that with a view to guard against

similar injury being done to the Anemometer in future, it may be placed (after repairs) on the roof of the stair case, which is *pucca*.

I have, &c.

GOPEENATHA SEN,

In charge of the Observatory.

Surveyor General's Office, Calcutta, 3rd December, 1867.

No. 46.

From Babu GOPEENATHA SEN, in charge of the Observatory.

To Col. H. L. THUILLIER, Surveyor General of India.

SIR,—With reference to your official memo. dated 26th November, 1867, calling upon me to explain certain anomalies, alleged by Mr. Blanford, the Meteorological Reporter, in his letter to your address, No. 280, dated 25th idem, to have occurred in the Barometric and rainfall records of the observatory of this office of the morning of the 2nd November last, I have the honor to submit the following remarks for your consideration.

2. Mr. Blanford states that the ten minute observations after 0 h. 20 m. on the 2nd November, ceased at this office, while those of M. Lafont were continued throughout the height of the storm at comparatively short intervals. The fact is, that the Barometer in our office is placed in an open shed for the purpose of admitting free action of wind. The observer on duty was exposed to the full brunt of the storm and rain, and it is not to be wondered at, that after a continued struggle till midnight, amid the furious strife of the elements, to do his work, he failed thereafter to take ten minutes' observations, though he did not omit to note the hourly observation. I suppose M. Lafont was not exposed to these serious drawbacks in taking his observations.

3. With regard to the difference in the readings of the three Barometers, I beg to observe that our Barometer being a standard one and consequently more sensitive than ordinary barometers, (as admitted by Mr. Blanford in his report on the cyclone of October 1864) the difference pointed out by him, in his letter under notice, may well be accounted for, partly by the difference of the instruments and partly by the irregular oscillations of the mercury during a storm.

In advertence to the discrepancy pointed out between my statement

of observations and that obtained by Mr. Ormsby, late Meteorological Reporter, from this office, I beg to observe that neither myself nor my assistants are responsible for his returns. He himself made a copy, and it would appear, took wrongly the three observations given below.

| Mr. Ormsby's statement, | | Office statement. |
|-------------------------|---------|-------------------|
| | Inches. | Inches. |
| Midnight, | 29·052 | 29·062 |
| 3 A. M. | 28·600 | 28·660 |
| 7 A. M. | 29·788 | 29·778 |

As regards the statement of rainfall, Mr. Blanford, I respectfully submit, evidently labours under a misconception of facts. It is true that I had told him that the lower rain gauge at our office was not reported on the night of the storm, inasmuch as "one had been blown over and the other had overflowed." The last statement should be received with some qualifications. I don't remember whether I used the word "overflowed," when I spoke to Mr. Blanford on the subject, but what I meant to say was this, that one of the gauges had collected in the funnel of the receiver a large quantity of rain, which had overtopped it: the bore of the funnel being closed by earthy matter, did not allow the water to go in to the receiver. My record of the rainfall had, however, been taken from the indications of the gauge attached to the Anemometer at this office. It had neither been blown down nor had it overflowed. Mr. Blanford lays great stress on the circumstance that in the weekly Register Table furnished by this office to the Meteorological Reporter, the rainfall between 22 hours on the 1st and 4 A. M. on the 2nd was given at 0·67 inch and that from 4 to 10 A. M. at 2·74 inches.

This apparent confusion is the natural result of the form of the Table prescribed by the Meteorological Reporter and not of an inaccurate observation as imputed. Properly speaking, the fall of 0·67 inch should have been quoted at 23 h. of the 1st November; but as there was no column for 23 h. in the weekly register table, it was necessarily inserted at the next available hour viz. 4 A. M. of the 2nd November, in the said table. There was no mistake in the original record, but the observations taken at 23 h. on the 1st November was entered in the column for 4 A. M. of the 2nd in the

weekly register table, which Mr. Blanford erroneously supposes represented the total rainfall according to the report of this office for the whole period of the cyclone. Further, the quantity of rain from midnight to 4 A. M. of the 2nd November, was 2.74 inches and from 5 to 10 A. M. it was drizzling. This quantity was only inserted in the Register table of the office at 10 A. M. of the 2nd November. It would be thus seen that from 5 P. M. of the 1st to 10 A. M. of the 2nd November, the actual rainfall was 3.41 inches. Mr. Blanford states that the rainfall given by M. Lafont for the 24 hours from 7 A. M. of the 1st November to 7 A. M. of the 2nd idem was 6.87 inches; whereas the rain recorded in the observatory for the same period amounts to 3.86 inches. This disparity between the two statements may, in my humble opinion, be accounted for by the height and local position of the two rain gauges under comparison. I may observe that in a storm, it is by no means improbable that the receiver of the observatory rain gauge being on the top of a high building, collects less than the actual rainfall. A greater portion of the rain being carried off by the force of the hurricane horizontally across the mouth of the instrument; whereas a rain gauge fixed on the ground and surrounded by buildings is likely to shew a much larger quantity.

I have given above a bare statement of facts. My position, I humbly conceive, does not permit me to comment on the reflections which Mr. Blanford, without due enquiry, has thought fit to make on the observations which I have the honor to take in this office, indirectly hinting, for reasons which I hope I have shewn to your satisfaction to be wholly groundless, that they are inaccurate and therefore unreliable.

I have, &c.

(Signed) GOREENATHA SEN,

In charge of the Observatory.

Mr. Blanford said that a few remarks from him would be necessary to explain certain portions of the correspondence just read. With regard to the destruction of the anemometer, he could endorse Colonel Thuillier's assurance that every precaution was taken to fix the vane-rod firmly; and so firmly had it been fixed, that some of the stays retained their place, the sheet lead which had covered the roof having lapped over the vane, and by sheer force torn the collar of the rod from

the bolts that fastened it to the stays. The destruction of the instrument was due to the mode in which the sheet lead had been fastened. The edges had been turned over the cornice of the roof and nailed underneath, instead of being bolted right through, with iron bars above and below the only fastening calculated to withstand a cyclone. No doubt the builders had not contemplated the occurrence of a cyclone, and the sheeting would have held fast in an ordinary storm; but when the wind had once made its way underneath the edges, nothing could preserve it from being torn away.

The notice of the approaching cyclone which is stated to have been furnished to the Meteorological Reporter had never reached him, as he had already explained officially. This was due to his having returned from England only two days before, and having assumed charge of his office only on the day before the cyclone, so that the notice referred to had been sent to Mr. Ormsby, who had officiated during his absence, instead of to himself. The non-receipt of this notice, which he understood to be the report of the barometric reading for 10 h. of the 1st, had not however delayed his action. The Saugor Island and Outtack reports were of more importance in such cases than those of Calcutta, but he had not felt justified in giving a general warning to the shipping even on the receipt of the Saugor 10 h. report. This had indeed prompted a telegraphic application for a further report, and on the receipt of the reply, the warning was communicated to the Master Attendant, before 3 o'clock of the afternoon of the 1st. The letter addressed to him as Meteorological Reporter had been written in reply to one which he had officially addressed to Colonel Thuillier in the same capacity, and in which he had entered in greater detail on the subject of the discrepant observations. It would hardly be necessary to discuss these details at length before the Society, as the resolution which had originated the correspondence had dealt with the main facts of the case.

The receipt of the following communication was announced.

From Capt. H. H. G. Austen; Notes to accompany a Zoological Map of a portion of the Khasi Hills, near Longitude 91° E.

Mr. Bayley announced that Col. Tennant is coming from England fully equipped with instruments in order to observe the eclipse of the sun which will occur on the 17th August, and will be total at Musulitain, at which station Col. Tennant proposes to establish his observatory.

LIBRARY.

The following additions were made to the Library since the last meeting in January.

* * The names of Donors in capitals.

Presentations.

Selections from the Records of the Government of India, No. 54. Home Department.—THE GOVERNMENT OF BENGAL.

Dattaka S'iromani.—G. M. TAGORE, Esq.

An old Zend-Pahlavi Glossary by Dr. M. Haug.—THE GOVERNMENT OF INDIA.

An uniform Metrology for India by C. F. Gower, F. S. A., F. G. S.—THE REV. C. H. DALL.

Cœurs d'Hindustani (Urdu et Hindi) A. l'École Impériale et Spéciale des Langues Orientales vivantes Discours d'Overture du 2nd Décembre, 1867.—THE AUTHOR.

An Elementary Grammar of the Coorg Language.—THE GOVERNMENT OF BENGAL.

The Indigenous Drugs of India, by Kánáyálála De.—THE AUTHOR.

Chaturdas'apadi Kavitámála, part I. by Rámadása Sena.—THE AUTHOR.

An enumeration of the Indian Species of Acanthaceæ by T. Anderson, M. D., F. L. S.—THE AUTHOR.

The Persian Metres by Saifi, and a treatise on Persian Rhyme by Jámi. Edited by H. Blochmann, M. A.—THE EDITOR.

Über einige Fische aus dem Fitzroy Flusse bei Rockhampton in Ost-Australien von Dr. F. Steindachner.—THE AUTHOR.

Ichthyologische Mittheilungen (IX.) Über einige neue Süßwasser-fische von Angola, von Dr. F. Steindachner.—THE AUTHOR.

A few words about two Andamanese lads ; by Capt. T. C. Anderson.—THE AUTHOR.

Last words of a few celebrities.—CAPT. T. C. ANDERSON.

A treatise on the Rubái entitled Risalah i Taranah by Agha Ahmad Ali.—H. BLOCHMANN, Esq.

Reise der Oesterreichischen Fregatte Novara um die Erde in den Jahren 1857, 1858, 1859, unter den Befehlen des Commodore B. von Wüllerstorff Urbair. Zoologischer Theil. Reptilien.—THE AUTHOR.

The Textile manufactures and the costumes of the People of India ; by J. Watson, M. A., M. D., F. R. A. S.—THE GOVERNMENT OF INDIA.

Nautical Almanac Circular No. II. on the phase of a total sun eclipse of August 17-18, 1868.—COL. J. T. WALKER.

Storm warnings, their importance and practicability ; by Col. Sykes.—THE AUTHOR.

Correspondence regarding the Comparative Merits of British and Native Administration in India.—THE GOVERNMENT OF INDIA.

The Fishes of Zanzibar.—THE GOVERNMENT OF INDIA.

Report on the Vegetation of the Andaman Islands.—DR. T. ANDERSON.

Results of a Tour in Dardistan, Vol. I. Pt. I. by Dr. Leitner.—THE AUTHOR.

Report on Civil Dispensaries of the Madras Presidency for 1866.—THE GOVERNMENT OF MADRAS.

Report on Public Instruction in the Madras Presidency.—THE GOVERNMENT OF INDIA.

Bulletin de la Société de Géographie, Oct. and Nov. 1867.—THE GEOGRAPHICAL SOCIETY OF PARIS.

Philosophical Transactions ; Vol. 156, Part II.—THE ROYAL SOCIETY OF LONDON.

The Annals of Indian Administration in the year 1865-66.—THE GOVERNMENT OF INDIA.

The Journal of the Linnean Society, Vol. 9, Nos. 34, 35, 38, and 39.—THE LINNEAN SOCIETY OF LONDON.

Transactions of the Zoological Society of London, Vol. 6.—THE ZOOLOGICAL SOCIETY OF LONDON.

Selections from the Records of the Government of India, No. 54.—THE GOVERNMENT OF INDIA.

Journal Asiatique, No. 35.—THE ASIATIC SOCIETY OF PARIS.

Purchased.

Thesaurus Craniorum. By Dr. J. B. Davis.

Hewitson's Exotic Butterflies, Part 64.

The Ruins of Mandoo ; by Capt. C. Harris.

Carus and Englemann's Bibliotheca Zoologica, Vol. II.

The Kamil, part IV. by W. Wright.

Works of H. H. Wilson : Vol. 8, Vishnu Puráná, Vol. 3.

Birmah, its People and Natural productions, by the Rev. F. Mason.

The Ferns of British India, parts 16, 17, by Capt. Beddome.

Reeve's Conchologia Iconica, parts 266, 267.

Roth and Böhtlingk's Sanscrit Wörterbuch; Lief, 3-5.

Gunther's Zoological Record, Vol. III.

The Mammals of India; by Surgeon Major T. C. Jerdon.

Padārtha Tattvasāra; by Pandita Jayanārāyaṇa Tarkapanchānana.

Reise der Oesterreichischen Fregatte Navara um die Erde, in den Jahren 1857, 1858, 1859 unter den Befehlen des Commodore B. von Wüllerstorff-Urbair. Zoologische Theil; Lepidopteren.

The Indian Medical Gazette, Vol. II, No. 12, 1867.

The Quarterly Journal of Science, No. 16, October, 1867.

Comptes Rendus, Nos. 18—20.

Calcutta Review, No. 91.

Revue et magasin de Zoologie; October, 1867.

The Annals and Magazine of Natural History, Nov., 1867.

Revue des Deux Mondes, for Sept. and Oct. 1867.

Journal des Savants, Nov., 1867.

The Indian Annals of Medical Science, No. 23.



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,

FOR MARCH, 1868.

A Monthly General Meeting of the Society was held on Wednesday, the 4th Instant, at 9 P. M.

E. C. Bayley, Esq., in the chair.

The proceedings of the last meeting were read and confirmed.

The receipt of the following presentations was announced.

1. From W. Rutledge, Esq., Two Specimens of *Llama glauca*.
2. From Bábu Harachandra Chaturdhurina, Zemindar of Mymensing; A stone slab bearing an Arabic inscription, found in his zemindary, Sherepore.

3. From Bábu Gauricharana Ráya. A specimen of *Strix Indica*.

4. From the Rev. F. F. Mazuchelli. An iron human cage.

The following letter from Mr. Mazuchelli, describes this donation.

MY DEAR GROTE,—I write to enquire whether the Asiatic Society would care to possess an old relic, in the shape of a human iron cage, discovered by me under a tree, at Furreedpore, and taken away with the permission of the Magistrate of that place. The cage is in a good state of preservation, but it has lost one arm. I have gathered all the information I could respecting the same, viz,—one authority tells me that dacoits, when caught, years ago, (say some 60 or 70 since,) between Dacca and Calcutta, were put alive in this cage and exposed to the air to die of hunger, as a lesson to others. Another authority tells me that the culprit was hung first and then put into the cage, and the cage hung up to a tree to deter others. But what seems to me the most probable story is, that under the Nizámat (the criminal

government) of the Nawáb Názir of Murshidábád in the last century, and even afterwards, under the English rule, it was the custom to hang persons, convicted of murder, at the Sudder or chief station of the district, and after decease, to remove the body in a cage to the native village of the deceased, and there suspend it on a gibbet as a warning to others. Now the cage I have now in my possession and which I willingly offer to the Society, is that in which, according to report of the people of Whau-Wharazpore, Thana Bêtká, the corpse of one Goriah Moochee was placed after execution for a murder of which he had been convicted.

This was when the station of Furreedpore was first established in 1809, and it would seem to be the only known instance of the kind in that district. A Mr. J. H. Ravenshaw found the cage at the above mentioned village in 1857, and had it brought to Furreedpore, where I found it. The natives had it in such horror, that they would go a good round to avoid it. One arm, as I have stated, is lost, and this occurred, when, as a joke it was sent by some one to the late Dacca Exhibition and sent back by its Committee with scorn. This is all I could gather respecting this wonderful relic. Let me know if it is accepted, and I shall then send it by the next steamer. * *

* * *

Yours most heartily,

F. F. MAZUCHELLI.

5. From Bábu Pránanátha Datta, a copy of Sanjuktá-Svayambaránátaka.

6. From V. Ball, Esq., a specimen of *Oiconia alba*.

The following gentlemen are candidates for ballot at the April meeting, as ordinary members.

H. S. H. Prince Frederic of Schleswig-Holstein; proposed by Major Lees, seconded by Mr. Grote.

Cumára Pramathanátha Ráya, Zemindar of Digápati, proposed by Babu Rájendralála Mitra, seconded by Mr. Grote.

Babu Bholánátha Chandra, proposed by Babu Rájendralála Mitra, seconded by Mr. Grote.

William McLaren Smith, Esq., Bengal Educational Service, proposed by Mr. J. M. Scott, seconded by Dr. Colles.

The following gentlemen have intimated their desire to withdraw from the Society.

E. T. Trevor, Esq.

J. Christian, Esq.

The Council reported that they have adopted the following resolution of the Finance Committee.

"Resolved that the following members, in arrears with their subscriptions, having received notices in accordance with the provisions of Bye Law 11, and not having paid within the time allowed, are to have their names struck off the list of members, as provided by the Rule.

The Hon. R. S. Ellis, M. C. S., Madras.

Maharaja Satis'chandra Raya Bahadur of Krishnagore.

W. H. Scott, Esq., Delhra Doon.

"And that they have adopted the following recommendations of the Finance Committee.

"That it be recommended to the Council that the following gentleman's name be struck off the member list, he never having paid his admission fees, and being thus non-amenable to the privileges of membership, and to the provisions of Bye Law 11.

Moonshee Sudderudin, elected November, 1861.

"That the collecting sircars' pay, now Rs. 9 and 10, be altered to Rs. 8 and 9 respectively, and a commission on subscriptions and small bills (not including Government bills) be allowed as follows;—

"If collected within the quarter in which the payment is due, 1 per cent.

"If in the next quarter following, $\frac{1}{2}$ per cent.

"Afterwards, $\frac{1}{4}$ per cent."

The Council also reported that they have resolved that scientific publications be left upon the table for a fortnight after their receipt, but that oriental publications be allowed to circulate at once, with the restrictions proposed by the Library Committee.

The council recommended that the special thanks of the Society be voted to Mademoiselle Clarisse Bader for a copy of her work. "*La Femme dans l'Inde Antique*" forwarded by her through M. Garcin de Tassy, to Messrs. Williams and Norgate, for the Society.

The Secretary read the following letter from Mademoiselle Bader, addressed to M. Garcin de Tassy, with the work.

"A Monsieur Garcin de Tassy, Membre de l'Institut.

"*Monsieur et illustre Maître.*

"J'ai en l'honneur de vous dire que la lecture du beau discours que vous aviez prononcé, le 2 Décembre dernier, avait éveillé en moi le désir d'envoyer à Calcutta, mon premier essai, déjà agréé par Sa Majesté la Reine d'Angleterre.

En considérant sur vos traces, les progrès que fait aux bords du Gange, la régénération morale de mon sexe, je devais naturellement penser à diriger vers cette région, *La femme dans l'Inde antique*, ce livre que j'ai écrit pour contribuer, non-seulement à vulgariser en France la littérature Sanscrite, mais encore à découvrir dans l'Inde antique les germes de civilisation que l'Evangile est appelé à féconder dans l'Inde moderne.

Avec cette gracieuse bienveillance qui vous caractérise, Monsieur, vous m'avez proposé de faire agréer mon premier travail à la Société Asiatique de Calcutta. Je ne pourrais mieux offrir cette modeste étude qu'à la savante Compagnie qui a si bien compris que la Christianisme ne remplirait dans l'Inde sa mission de salut, qu'en s'appropriant les éléments presque évangéliques que renferment les anciennes traditions Sanscrites.

Déjà, en 1864, j'ai pu rendre un hommage public à cette Compagnie, en lui consacrant, dans *l'Annuaire des sociétés savantes*, une notice que m'avait demandée M. le Comte Servins d'Héricourt, l'auteur de cette publication, et l'un de nos meilleurs amis. (1re édition, Tome II, p. 498 à 461).

C'est donc avec une vive reconnaissance que je remets entre vos mains le livre qui, muni d'un passeport délivré par le plus savant indianiste de mon pays, parviendra à sa haute destination.

Veuillez agréer, Monsieur, l'expression de mes sentiments les plus respectueux.

CLARISSE BADER.

Chez son père, officier principal du service de l'Intendance militaire en retraite, officier de l'Ordre Impérial de la Légion d'honneur.

62, rue de Babylone, à Paris.

The Secretary then read a letter from the Under-Secretary to the

Government of India, informing the President of the despatch of a copy of "A memorandum descriptive of the various tribes of Mysore" by Major Puckle.

Also the following extracts from a letter from Mr. W. T. Blanford, on the Zoology &c. of Abyssinia.

Mr. W. T. Blanford writes from Zoulla, Annesley Bay, on the 29th January,—

"My last letter to you was written, I think, on the 7th or 8th. The chief ordered me off to Undul or Mayen to look up the water supply; so I started on the 10th. I marched by the regular marches; Koomeylee the first day, 13 miles from this, across the plain, which is sandy, with a peculiar ever-green bush for about 3 or 4 miles, and then stony, over beds of coarse gravel washed from the hills by torrents, till close to Koomeylee. Almost the only tree is a very thorny *Acacia*, certainly distinct from the 'Babul' of India, and very flat on the top, almost mushroom shaped. Besides the long white thorns of the dwarf *Acacia* of India, it has recurved hooks along the branches.

"At Koomeylee the hills begin; all of gneissose and schistose rocks, with a steady north and south strike, dipping at low angles to the east. They roll over to the east, and 10 miles up the pass have higher dips; and thence continue steadily dipping to west or nearly so at angles above 60° up to near Senaffe. There is a very large supply of water at Koomeylee, which, the engineer officer there thinks, is due to a stream running beneath the gravel of the valley forming the pass; but this can scarcely be, for the temperature of the water is over 90° , and a stream could not, at this time of the year especially, be hotter than the annual mean temperature, which can scarcely exceed 85° at the outside.

"The second march is up the valley of the Koomeylee stream to Upper Sooroo. Ten miles from Koomeylee, the valley narrows to a high gorge, with precipitous rocks and running water. This, of course, looks as if water ran beneath the sand under the whole valley; and it probably does so to some extent. The scenery in the Sooroo gorge is very fine. All the hills are covered with very thin scattered scrub, chiefly *Acacia*. In the valley are small patches of jungle, increasing in number above.

"From Sooroo, the next march, fourteen miles, is to Mayen, also called Undúl. Here a well has been dug, and there is now a large supply of water. I tested it just before leaving, and it gave 700 gallons per hour. A little above, at a place where three or four streams meet, is a plain about a quarter of a mile broad, covered with jungle, and it is this plain, formed of gravel, which, I think, supplies the water at Mayen, where rock nearly crosses the valley. All the route from Koomeylee to near Senaffè, is one valley, with a most gradual ascent, and a very good road is now nearly finished throughout, so that carts can go. Unfortunately the first heavy rain will cause a flood in the stream, and half the road will vanish.

"I stayed at Mayen eight days, running out for two nights to Undúl up a side valley to the west, about ten miles from the main pass, where there was water and a Shoho village. From the plain already mentioned, there are seen, to the westward up the Undúl ravine, high mountains capped with white sandstone and having a flat top. They are part of the Tekoonda plateau. Sandstone, resting on Metamorphics, forms the whole plateau from Tekoonda to Senaffè. I climbed up to the sandstone but could not quite reach the top. However I obtained the first land shells I have seen; a *Helix*, a *Vitrina*, one large *Bulimus*, and another, a small pupiform species. When I came back, I found one of my horses sick with the disease that has killed so many of the horses and mules. I gave him up at once; however, despite every body's prediction, he pulled through. I then ran up for a day to Senaffè, two marches farther: the first to Rereguddy, where there is running water; thence to Senaffè. To Rereguddy the pass is the same as below; a gradual ascent between almost barren hills; but beyond, the hills are green and covered with bushes. About five miles from Rereguddy, the road ascends by zigzags to the plateau: this last, the only steep ascent on the road, not exceeding 800 to 1,000 feet. Senaffè is about 7,500 feet. On this ascent a kind of fir is abundant. It is a stunted tree like a young cedar.

"I returned from Senaffè to Mayen the next day, and after waiting there a day, returned to Zoulla. Here I found the camp still very large. The railway is progressing, and the train now runs four miles,

and is expected to be through to Koomeylee in six weeks. Stores are coming in and are now procurable in considerable quantities. Sheds are rapidly being erected. The bushes around are fast disappearing for fire-wood. The water is scarcer than before and slightly brackish. Dr. Cook, the Meteorologist has arrived, and I think we may probably go on together. Everything, however, depends on transport.

"The fauna here is rather poor. The man whom I left behind to collect, had only eighteen or twenty species of birds when I returned, and almost all of them I had before. The only very common birds are three species of Wagtail, a *Motacilla* which I cannot distinguish from *M. Delphinensis (vera)*, Sykes, and two *Budytes*, four larks, (1) a true skylark, (2) the little *Calendrella brachydactyla* so common in open places in India, or a very nearly allied form, (3) a *Phyrrhulauda*, the male handsomer than the Indian species, with all the lower parts black and (4) a fine desert lark *Certhilauda*. Two *Saxicolæ* abound, and a *Drymoica* is common in the bushes. *Cercomela melanura* is scarce here, but abounds in the passes.

"The game birds are a guinea fowl (*Numidia*) with blue wattles and a horny casque,—a fine partridge, with much naked skin of a bright orange and yellow colour on the head and forepart of the neck; one species of bustard at least; and a sand-grouse closely allied to the Indian *Pterocles fasciatus*. It may be *Pterocles quadrinctus*, Temm. which Jerdon mentions. There are a few shore waders; a pelican, of which I have not a specimen yet, and some gulls; a white necked crow and a few rapacious birds almost complete the Zoulla avi-fauna.

"The mammals are two species of *Gazella*; one typical, always solitary or in pairs, and closely allied to the Indian Chinkara; the other, a much larger animal which goes in large herds, and is about the size of the Indian antelope, but higher on the legs. A wart-hog (*Phacochoirus*) is common. The jackal is quite different from that of India: it is a slighter built animal with longer legs and ears. The hair is also peculiar. There is a fox, but I have not seen him. One species of *Hyrae* inhabits the shores of the bay. Another, and much larger form inhabits the passes.

"On the hills, the fauna is much larger and more varied. One of the most interesting animals is a peculiar rodent which inhabits the rocks, and which is very probably Blyth's *Pectinator Spekei*, or possibly a second species of *Pectinator*. It has a short bushy tail carried like a squirrel's; so much so, that I took the first specimen I saw for a squirrel which had lost half his tail. The skin is the most tender of any mammal I ever attempted to preserve. It is very common in the pass. Then there is a ground squirrel *Xerus*, a new species I think; at least it does not correspond exactly with *X. rutilans*. and Ruppel and Gray, in the list lately published in the Annals and Magazine of Natural History, mention no other allied to it. There is a very handsome canine animal, of which I have only seen one imperfect skin, brown with the back grizzled black. There are one or two large antelopes; one of them a 'Koodoo' (*Tragelephas* or *Strepsiceros*) different, I believe, from the S. African species. A distinct species of hare from that found here, is also said to occur.

"The chief changes in ascending occur about 2,000 feet to 3,000 feet. There are not so many gradations in the fauna and flora as in ascending the Himalayas and Nilgiris; at least, I think not. Many birds and plants of the plains, or rather of the base of the hills, are found up to 3,000 and 4,000 feet."

The receipt of the following communication was announced.

Statistical data on the area of Asiatic Russia; by M. M. Vranikof, translated by R. Mitchell, Esq., F. R. G. S., communicated by Colonel T. Walker.

The Secretary then read the following papers:—

MR. CARNEGIE'S QUERIES REGARDING RACES OF INDIA.

1. In my settlement enquiries I pay a good deal of attention to ascertaining the past history of the different clans and races; and I now propose to ask your kind assistance, to get cleared up for me, by some of your enlightened coadjutors, a small matter that has disturbed my mind not a little.

The whole subject may be got into the short and rather uninviting sentence, "What is Caste?"

You are well aware that this place is the former capital of the long race of Solar Kings which began with Iksháku, which included in its number, Dasaratha, Raghu, and Rámachandra, and which ended with the expulsion of the last of them, Raja Dirigbow, who fled to the south, probably about the time that Rájá Nanda or his son Chandra Gupta of the Sudra caste, who lived in the days of Alexander the Great, overwhelmed and suppressed the Rajputs.

According to Hindu annalists, the Rajputs were altogether annihilated in the interests of Bráhmāna, by Parasurāma; and, after several generations, they were recreated on Mount Aboo, in view to their fighting the battles of Bráhmanas against the Budhists. Be that as it may, there is no doubt that the Rajputs gained head again in these parts contemporaneously with the Mahommedan conquest, and have since well maintained their influence.

It is said that, driven from all the great centres of Rájput power and Hindu devotion by the Mahommedan conquerors, the Kshatriyas took refuge in flight; and betook themselves, amongst other places, to Ayodhyá, their old seat of empire, whence the Bhars had driven them, creating colonies wherever they went.

Now, my own theory is that the Rajputs were neither exterminated nor wholly driven hence; that the more respectable and influential clansmen may have fled before the then dominant Sudra rulers; but that the mass of the Kshatriyas remained and were, in fact, no other than the Bhars; and that the final overthrow of these degraded Bhars, after the fall of Delhi, was neither more nor less than the restoration of Rájput influence in these parts, and the social reclamation of the so-called Bhars.

The weight of opinion seems to be in favour of the argument that the Bhars were an aboriginal people. Mr. Thomason says that the inhabitants of these parts in Rāma's time are known to us by the name of Raibhars. Sir Henry Elliot pronounces them to be "one of the aboriginal races of India," and he traces affinity between them and Churus, Bhiyas, Bhutias, and perhaps Bhils and Ahirs.

Elphinstone hazards the observation that such aboriginal races as these just named, were probably the monkeys that formed the mythical army of Rāma. Lastly, one of the most intelligent natives of my

acquaintance, a Bráhmāna, steadily affirms that the Bhars were, in fact, Rájputs.

From all this, I think an inference may be fairly drawn that the Bhars are the aborigines of Eastern Oudh; that they were Rájputs in Ráma's time; that when they lost their king, they became degraded; but that after the Mahommedan conquest, when the purer Rájputs who had fled to the west and who had, up to that time, maintained their superiority, were again driven eastwards to Oudh, they gradually mixed with the Bhars or degraded Rájputs who never left their homes; probably intermarried with them by degrees, raised them in the social scale, and finally absorbed them altogether; that, in fact, the suppression of *Bhardom* was, as I have already said, a social reformation much more than it was a Military achievement!

"It is always thus," remarks Sir E. Tennant, in his "Ceylon," "the fate of the aborigines (viz. absorption into the dominant race) was that usually consequent on the subjugation of an inferior race by one more highly civilized."

If the Ceylon Buddhists, descended from a North West Bráhmāna, could, in time, absorb the aboriginal worshippers of snakes and demons in that island, as they are said to have done, then there is no reason why the Rájputs, returning from the west, may not have, by slow degrees, absorbed the aboriginal Bhars or quasi-Rájputs of Eastern Oudh.

Buchanan says that the Bais Rájputs are descended from Chirus, and these, it has already been said, were akin to Bhars.

The chief of Singrowlee in the Mirzapoor district, according to Sir Henry Elliot, is also a Chirus, although he calls himself a Benbuns.

In Tod's Rajasthan it is admitted that the Rájputs have intermarried with the degraded but aboriginal tribes and have become a distinct race. In describing themselves, they are said to unite the tribes of their father and mother, and of this I will now quote instances within my own knowledge.

First. Khunoma Rawat began life, in the Lucknow district, as a village watchman of the degraded Pasi caste. His second son was named Bakhta, who had a son, Visvaráma, whose son was the once no-

torious Gangá Buksh. This Gangá Buksh, in the words of Sleeman, "became enlisted into the tribe of Rájputs, and his sister was married to the Powar (Rájput) Rájá of Etonda. Rájá Yodha Sing, is her son. Sahuj Rám of Pokhura, perguunahí Hydergurh, of the Ameth-na tribe of Rájputs, married a daughter of Gangá Buksh."

The transformation, in this instance, from a low caste village watchman, to a high caste Rajput noble, occupied no more than four generations!

Second. The *Raotars* of this district are avowedly Rájputs sprung from a Bráhmāna father and Ahir mother (and I have said that Sir H. Elliot thought Ahirs akin to Bhars.) The daughters of these Raotars marry into the best Rájput families in the land.

Third. One of the original Pulwar (Rájput) colonizers of this and the Azingurh district, besides having a wife of his own class from whom the talookdars of Birlur are descended, took also an Ahirin, a Bharin, and a Daivi (demon) to wife, and the progeny of these women are now Rájputs. The talookdars of Tigra and Morerah of this district are of the number of their descendants. Further details of this family will be found in the Surhampur Report, but I may mention that the Ráj Kumár Thákurs, who consider themselves to be Chowhans of Mynpoorie, the cream of Rájputs, and a most exclusive clan, do not scruple to marry their daughters to the descendants of the low caste Daive!

These latter transformations, however, took more generations to bring about, than did the first given above.

These are notable instances of the descendants of people of low caste being raised in the social scale, and I therefore do not see why it may not fairly be assumed, that most of our Rajputs of these days have resulted from the general amalgamation of the Bhar and Kshatriya races, if, indeed, they were not originally one and the same.

There is one more point I would mention. Raja Bucktawur Sing told Sleeman that the having to take low caste wives was one of the punishments inflicted on Rájputs for killing their daughters. In connexion with this subject, I would state that a wholesale system was brought to light in this district only last year, while I was in charge, of Bráhmanas and Kshatriyas of apparent respectability trafficking in low caste girls just as they do in bullocks, procuring them as

best they could and selling them under false pretences, knowing them to be of low caste, to other Bráhmanas and Kshatryas who were often relatives of their own, in view to marriage. The offspring of these marriages would of course pass as pure; and yet it was popularly known that the parentage of the thus-obtained mothers was enveloped in obscurity if not something worse.

We have then, on the one hand, the ancient chiefs of the land marrying into families of known impurity of origin, and we have, on the other hand, the clansmen buying their wives, of whose origin they know absolutely nothing; and the more I think over these things, the more does the question with which I began this letter press itself on my astonished vision, viz. "What is Caste?"

Any light that can be thrown upon the above interesting subject by yourself, or any other enlightened member of the Society, will be thankfully received by

P. CARNEGIE.

The Secretary also read the following from Lieut. SALE.

Near Bèr sip or Khabúr village on the road from Laiping to Assaloo, north Cachar, about six miles from Saiping, in a rice field, there are found a considerable number of hollow, irregularly shaped spheres formed of grey sandstone. These spheres are more finished in the upper than in the lower hemispheres and are roughly hollowed out; the aperture being always uppermost and varying with the size of the vessel.

The vessels themselves vary from 5 to 2 feet in horizontal diameter, (the shape being that of a flattened sphere) and are extremely massive: the sandstone, out of which they are hewn, is covered with a number of small holes or depressions as if the vessels had been exposed to the attacks of some rock-boring insect.

The natives of Bèrsip village say that large numbers of these vessels are scattered over the hills between N. lat. $25^{\circ} 15'$ — $25^{\circ} 30'$ and E. long. $92^{\circ} 40'$ — $92^{\circ} 50'$ and, according to their story, they were made by a rajah named Sazar who lived in some very remote age, and that he made them "*nam ki waste*."

They are said to exist in great quantities in a hill termed Golsazar

about 10 miles N. N. E. of Saiping and that their being so present has given the name to the hill.

The only conclusion that I would offer as to their origin and use is, that they were made by some former race of hill-men, to store grain in, and that the lower unfinished half was set in the ground, but the makers must have been of a totally different race from the present inhabitants.

Mr. Blanford said that so far as an opinion could be found from the description and accompanying sketches, it seemed probable that the spheres in question were concretions, and therefore of natural origin. Concretions consisting of a hard shell containing loose sand were not uncommon in sands and friable sandstones; and sometimes gave occasion for much wild speculation. Their mode of formation was not perhaps well understood, nor was that of many other equally strange concretionary forms, but they were all the result of crystalline action, portions of the soft matrix being cemented together by some infiltrated mineral; in most cases either limonite, calcite or silica. Hollow concretions of the kind noticed had been described by Sir Samuel Baker in his recent work 'The Abyssinian tributaries of the Nile' as very abundant in the Nubian Desert; and were spoken of with the utmost confidence as volcanic bombs, with which, it was abundantly clear from his description, they had no relation whatever.

ON THE DETERMINATION OF THE LATITUDE AND LONGITUDE OF PORT BLAIR; EXTRACTED FROM LIEUTENANT-COLONEL J. T. WALKER'S REPORT ON THE OPERATIONS OF THE GREAT TRIGONOMETRICAL SURVEY OF INDIA IN 1865-1866.

In the year 1861, the Superintendent of Port Blair, the well-known convict settlement on one of the Andaman Islands, in the Bay of Bengal, reported to the Government of India that the position of the Great Coco Island, which lies immediately to the north of the Andamans, was so inaccurately laid down on the Admiralty Charts, that the safety of ships sailing between Calcutta and Singapore was endangered thereby; shortly afterwards, a communication was received from the Bombay Government representing that the longitude of Port

Blair itself, and consequently of the general group of the Andaman Islands, was equally doubtful.

It was therefore necessary to take steps to rectify the existing Charts, either by determining astronomically the absolute longitude of a station in each of the groups of Islands which lie between Cape Negrais, the southernmost point of the Burmese Provinces, and Acheen Head the northernmost point of the Island of Sumatra; or by the method of determining the latitudes and azimuths of mutually visible points on the groups of Islands and thence computing their differences in longitude. As the Islands trend in a nearly meridional direction from Burmah to Sumatra, the second method might if feasible be adopted, with the advantage of giving very much more accurate results than observations for determining absolute longitudes. Some of the groups of Islands are not ordinarily visible from each other; but, from a consideration of their distances and their heights above the sea, I am of opinion that luminous signals erected on lofty scaffoldings would be mutually visible at night; and if so their azimuths could be accurately measured, as the Pole Star never reaches a high altitude in these latitudes. It would also be an easy matter to execute at the same time an accurate triangulation, to fix the positions of certain of the surrounding Islands, some of which are known to rise to heights exceeding 1,000 feet above the sea level; thus an accurate basis might have been prepared for the topography of the Islands.

In consequence, however, of the want of adequate means to enable the Surveyors to pass from one Island to the other whenever convenient, it was necessary to abandon the method of combining Astronomical with Trigonometrical observations, and to restrict the operations to the determination of absolute latitudes and longitudes by Astronomical observations. At first it was intended that one or more points should be fixed in each of the several groups of Islands, but an intimation was subsequently received from the Secretary of State for India, that a complete Maritime Survey of the Islands would be made under instructions from the Admiralty, and that a battery of 15 chronometers would be employed for the determination of the differential longitudes. Consequently the operations were limited to fixing the position of Port Blair as a point of origin for the Maritime Survey.

For the longitudes it was decided to adopt the methods of Moon Culminations and Lunar Zenith distances, employing, for all the observations, one of the large Astronomical Circles which were brought out to India by Colonel Everest, and are described in his account of the Indian Arc; their vertical circles have a diameter of 3 feet, and the telescopes a focal length of $4\frac{1}{2}$ feet and a magnifying power of about 80. A temporary observatory with rotating dome was constructed at Calcutta and sent to Port Blair. Mr. Nicolson, an Assistant to the Surveyor General, was deputed to take the observations, and as from his previous training in the Trigonometrical Survey he was well qualified to observe Transits and Zenith distances, and as the latter observations can be multiplied to any desirable extent, whereas but few occultations and culminations can be observed during a short time, he was directed to base his operations on Lunar Zenith distances. He was furnished with an astronomical clock, a mean time chronometer, a collimator, a barometer, and thermometers.

His residence at Port Blair was protracted over a far longer period than had been anticipated; it was hoped that he would have been able to complete his observations before the commencement of the rainy season of 1862, but what with delays in getting a vessel to transport him and his instruments to Port Blair, delays in the voyage, and difficulties in getting workmen to set up the observatory, his preparations were only completed just before the monsoon set in, and for several months the weather prevented any continuous observations. Thus the work has been spread over a long time; but the results should be improved thereby, as the tabular errors of the moon's place are more likely to vary and tend to cancel each other in a long than in a short period.

After the greater portion of the observations had been completed, an accident happened to the astronomical clock which rendered it useless for a time; the chronometer was therefore employed for the remaining observations. Time was determined each night by the meridional transits of at least four Nautical Almanac Stars, half of which were observed with the illuminated pivot of the transit axis pointing to the east, and the remainder with it pointing to the west. The lunar zenith distances were, as a rule, taken in pairs, with the illuminated pivot to the left for one observation, and to the right for the

other, in order to eliminate instrumental errors. The moon's transits in altitude were taken over 5 horizontal wires, and corrections for inequality of motion were applied whenever necessary. Each observation was reduced independently after the application of the instrumental corrections, but as it appears from the results that the instrumental errors have not been determined with exactitude, the few single observations which were taken have been rejected, and only the pairs retained. The number of pairs is 101; the probable error of a single pair, when the astronomical clock was used, is ± 3.04 sec; with the chronometer it is 3.31, showing that the results were very slightly impaired by the loss of the services of the clock. The moon was observed both when north and when south of the prime vertical, and almost as many times when east of the meridian, as when west. The zenith distances range from 23° to $64\frac{1}{2}^{\circ}$; the moon's distance from the prime vertical never exceeded $17\frac{1}{2}^{\circ}$, and was usually much less; the azimuths ranged from 67° to 125° .

For the culminations it is only necessary to remark that 29 were observed, that the tabular elements were taken from the section "Moon Culminating Stars" of the Nautical Almanac, that the illuminated pivot of the instrument if pointing towards the east one evening, was usually pointed to the west on the next evening, and that the transit axis was reversed on its pillars six times during the course of the observations.

The probable errors of the zenith distances have been computed from the differences between the mean of each pair of observations and the general mean of the group to which the pair appertains. Those of the culminations have been computed from the differences between the single observations, and the general mean of all. Being calculated on the assumption that the tabular places in the Nautical Almanac are free from error, they are of course smaller than they would be if the probable errors of the tables were taken into consideration. But they sufficiently serve the purpose for which they are required, namely, to combine the separate groups of results with weights inversely proportional to their squares.

The results of the individual Observations are given below and the final results are as follows :—

| GROUP | Number of pairs or single determination. | Longitude in time E. of Greenwich. | Probable error of a single culmination or a pair of zenith distances. | Probable error of group. |
|---|--|------------------------------------|---|--------------------------|
| | | <i>h m s</i> | <i>s</i> | <i>s</i> |
| Moon Culminations, | 29 | 6 10 50.64 | ± 6.79 | + 1.26 |
| Lunar Zenith Distances to times by Astronomical Clock, .. | 67 | 6 10 50.53 | 3.04 | 0.37 |
| Lunar Zenith Distances to times by Chronometer, | 34 | 6 10 51.88 | 3.31 | 0.57 |
| Final Longitude East of Greenwich, | { | In time, 6 h 10 m 50.92 s | ± 0.30 s | |
| | | In Arc, 92° 42' 43".8 | ± 4".5 | |

It will be seen that the probable error by a single culmination is more than double that by a pair of zenith distances, a curious circumstance which could scarcely have been anticipated, and which shows that in tropical latitudes a few nights of observations of lunar zenith distances will give as satisfactory a result as observations of culminations extending over several months, for not more than 8 culminations can usually be observed in a month, and several of these may be lost if the weather is cloudy and unfavorable.

The latitude was deduced from observations of 17 stars situated to the north of the zenith and 20 stars to the south, the means of the two groups differing by only 0".08. The final result is—

North lat. 11° 41' 12", 85° 0' 11.

The probable error is computed on the assumption that there is no constant error in the Tables in the Nautical Almanac, from which the stars' places were taken.

The Observatory was situated on the highest point of Chatham Island at an altitude of 73 feet above the sea and about 30 feet to the south of the upper road from the Sepoy Barracks on the west of the Island to the officers' quarters on the east. It is 150 feet NE. of the east wall of the Sepoy Barracks, 130 feet NW. of the nearest corner of the house built for the Overseer of the Department

of Public Works, and 200 feet to the south of a salient point on the Coast. These measurements are taken from a block survey of Chatham Island, dated 20th May, 1865, which has been furnished by Lieutenant Cumming, R.E; the Executive Engineer at Port Blair.

The station is marked by a circular pillar of masonry rising a few inches above the ground level, on the surface of which there is a stone with a mark showing the exact point over which the Astronomical Circle was centered. The pillar has been covered with a cairn of stones, into which a marble slab has been built, containing the following inscription:—

THIS STONE MARKS THE SITE OF THE OBSERVATORY ERECTED IN 1861, ON CHATHAM ISLAND, FOR DETERMINING THE POSITION OF PORT BLAIR.

THE OBSERVATIONS WERE TAKEN BY MR. NICOLSON, OF THE SURVEY DEPARTMENT, WITH AN ALT-AZIMUTH INSTRUMENT, HAVING A VERTICAL CIRCLE OF 3 FEET IN DIAMETER. THEY WERE REDUCED IN THE OFFICE OF THE GREAT TRIGONOMETRICAL SURVEY OF INDIA.

RESULTS.

LATITUDE, 11° 41' 13'

LONGITUDE EAST OF GREENWICH, 92 42 44

THE LONGITUDE WAS DETERMINED BY 202 OBSERVATIONS OF LUNAR ZENITH DISTANCES, AND 29 CULMINATIONS.

I may here observe that in the Admiralty Chart which was compiled from the Surveys of Lieutenant Blair and Captain Moorsom in 1789-90, and was revised by Lieutenant Heathcote in 1853, the longi-

Seconds of Results by Moon Culminations.

| DATE. | RESULT. | DATE. | RESULT. |
|------------------------|----------|---------------------|----------|
| | <i>s</i> | | <i>s</i> |
| 5th June, 1862, .. | 46.51 | 4th February, " .. | 44.85 |
| 6th " " .. | 29.03. | 5th " " .. | 54.03 |
| 8th " " .. | 50.00 | 6th " " .. | 50.00 |
| 9th " " .. | 64.08 | 7th " " .. | 55.69 |
| 13th " " .. | 43.74 | 9th " " .. | 71.17 |
| 14th " " .. | 37.23 | 10th " " .. | 63.89 |
| 5th November, 1862, .. | 50.14 | 27th " " .. | 43.09 |
| 5th January, 1863, .. | 37.75 | 28th " " .. | 51.11 |
| 10th " " .. | 59.41 | 2nd March, 1863, .. | 52.17 |
| 11th " " .. | 61.42 | 2nd April, " .. | 62.27 |
| 30th " " .. | 43.51 | 3rd " " .. | 52.88 |
| 31st " " .. | 47.12 | 4th " " .. | 50.13 |
| 1st February, " .. | 45.21 | 6th " " .. | 56.73 |
| 2nd " " .. | 34.83 | 7th " " .. | 67.25 |
| 3rd " " .. | 43.32 | | |

Mean = 6 h 10 m 50.64 s.

tude of Chatham Island is given as $92^{\circ}56'$. The whole group of islands is therefore about 13 geographical miles to the west of the position which has hitherto been accepted. The officers of the surveying brig *Olyde* determined the longitude to be $92^{\circ} 47' 30''$ approximately, and it appears to have been in consequence of their representations,

Seconds of Results by Lunar Zenith Distance, when the Astronomical Clock was used.

| DATE. | | Moon's Aspect. | | Results. | | |
|---------------------|-----|-----------------------------------|-------------------------------|----------|----------|-------|
| | | N. or S. of prime vertical. | E. or W. of meri- dian. | I. P. L. | I. P. R. | Mean. |
| 6th February, 1863, | ... | S. | E. | 46°22 | 53°44 | 49°83 |
| ditto | ... | ... | ... | 46°99 | 54°01 | 50°50 |
| ditto | ... | ... | ... | 55°96 | 55°75 | 55°86 |
| 7th | ... | ... | ... | 46°32 | 41°31 | 43°82 |
| ditto | ... | ... | ... | 54°47 | 54°17 | 54°32 |
| ditto | ... | ... | ... | 55°66 | 55°08 | 55°37 |
| ditto | ... | ... | ... | 52°93 | 56°57 | 54°76 |
| ditto | ... | ... | ... | 55°83 | 60°01 | 57°92 |
| 9th | ... | ... | ... | 54°17 | 56°58 | 55°38 |
| ditto | ... | ... | ... | 49°04 | 66°21 | 57°63 |
| ditto | ... | ... | ... | 55°55 | 53°93 | 54°74 |
| ditto | ... | ... | ... | 52°40 | 57°14 | 54°77 |
| ditto | ... | ... | ... | 54°46 | 65°00 | 59°73 |
| ditto | ... | ... | ... | 56°64 | 65°51 | 61°08 |
| ditto | ... | ... | ... | 56°94 | 57°69 | 57°32 |
| 26th | ... | N. | E. | 52°25 | 52°01 | 52°13 |
| ditto | ... | ... | ... | 46°91 | 43°30 | 45°11 |
| ditto | ... | ... | ... | 45°22 | 47°80 | 46°51 |
| ditto | ... | ... | ... | 41°83 | 53°43 | 47°63 |
| ditto | ... | ... | ... | 47°00 | 52°61 | 49°81 |
| ditto | ... | ... | ... | 44°59 | 49°37 | 46°98 |
| ditto | ... | ... | ... | 47°84 | 46°11 | 46°98 |
| ditto | ... | ... | ... | 39°65 | 50°73 | 45°19 |
| ditto | ... | ... | ... | 45°80 | 49°85 | 47°83 |
| ditto | ... | ... | ... | 35°87 | 55°88 | 45°88 |
| ditto | ... | N. | W. | 53°56 | 53°50 | 53°53 |
| ditto | ... | ... | ... | 55°24 | 50°40 | 52°82 |
| ditto | ... | ... | ... | 57°62 | 50°40 | 54°01 |
| ditto | ... | ... | ... | 53°26 | 47°02 | 50°14 |
| ditto | ... | ... | ... | 55°80 | 54°34 | 55°07 |
| 27th | ... | N. | E. | 47°19 | 50°90 | 49°05 |
| ditto | ... | ... | ... | 41°52 | 45°61 | 43°57 |
| ditto | ... | ... | ... | 41°53 | 56°29 | 48°91 |
| ditto | ... | ... | ... | 36°88 | 55°60 | 46°24 |

Mean = 6 h 10 m 50.53 s

Seconds of Results by Lunar Zenith Distances, when the Astronomical clock was used.

| DATE. | Moon's Aspect. | | Results. | | |
|--------------------------|-----------------------------------|-------------------------------|--------------------|--------------------|--------------------|
| | N. or S. of prime vertical. | E. or W. of meri- dian. | I. P. L. | I. P. R. | Mean. |
| 27th February, 1863, ... | N. | E. | ^s 47.04 | ^s 47.77 | ^s 47.41 |
| ditto ... | ... | ... | 45.89 | 46.92 | 46.41 |
| ditto ... | ... | ... | 42.47 | 47.45 | 44.96 |
| ditto ... | ... | ... | 45.39 | 56.03 | 50.71 |
| ditto ... | ... | ... | 46.24 | 45.31 | 45.78 |
| ditto ... | ... | ... | 45.84 | 47.73 | 46.79 |
| ditto ... | ... | ... | 44.78 | 46.07 | 45.43 |
| ditto ... | N. | W. | 46.32 | 45.88 | 46.10 |
| ditto ... | ... | ... | 45.75 | 50.09 | 47.92 |
| ditto ... | ... | ... | 46.51 | 44.72 | 45.62 |
| ditto ... | ... | ... | 48.49 | 41.55 | 45.02 |
| ditto ... | ... | ... | 51.44 | 51.50 | 51.47 |
| ditto ... | ... | ... | 50.13 | 45.07 | 47.60 |
| ditto ... | ... | ... | 42.34 | 54.91 | 48.63 |
| 28th ditto ... | N. | E. | 45.43 | 48.18 | 46.81 |
| ditto ... | ... | ... | 40.30 | 56.86 | 48.58 |
| ditto ... | ... | ... | 40.89 | 52.68 | 46.79 |
| ditto ... | ... | ... | 45.91 | 56.42 | 51.17 |
| ditto ... | ... | ... | 50.14 | 55.54 | 52.84 |
| ditto ... | ... | ... | 49.51 | 66.84 | 58.18 |
| ditto ... | N. | W. | 54.53 | 64.54 | 59.54 |
| ditto ... | ... | ... | 60.99 | 54.64 | 57.82 |
| ditto ... | ... | ... | 49.84 | 50.58 | 50.21 |
| ditto ... | ... | ... | 50.26 | 48.00 | 49.13 |
| ditto ... | ... | ... | 45.98 | 52.39 | 49.19 |
| ditto ... | ... | ... | 46.16 | 41.15 | 43.66 |
| ditto ... | ... | ... | 44.94 | 48.20 | 46.57 |
| ditto ... | ... | ... | 59.42 | 46.47 | 52.95 |
| ditto ... | ... | ... | 51.02 | 49.43 | 50.23 |
| ditto ... | ... | ... | 55.92 | 49.44 | 52.68 |
| ditto ... | ... | ... | 51.72 | 54.37 | 53.05 |
| ditto ... | ... | ... | 55.07 | 51.92 | 53.50 |
| ditto ... | ... | ... | 58.11 | 46.20 | 52.16 |

Mean = 6 h 10 m 20.53 s

*Seconds of Results by Lunar Zenith Distances, when the Chronometer
was used.*

| DATE. | | Moon's Aspect. | | Results. | | |
|-------------------|-----|-----------------------------------|-------------------------------|--------------------|--------------------|--------------------|
| | | N. or S. of prime vertical. | E. or W. of meri- dian. | I. P. L. | I. P. R. | Mean. |
| 25th March, 1863, | ... | N. | E. | ^s 66.39 | ^s 39.17 | ^s 52.78 |
| ditto | ... | ... | ... | 62.22 | 42.78 | 52.50 |
| ditto | ... | ... | ... | 56.70 | 46.67 | 51.69 |
| ditto | ... | ... | ... | 61.37 | 40.46 | 50.92 |
| ditto | ... | ... | ... | 64.68 | 40.55 | 52.62 |
| 26th ditto | ... | ... | ... | 66.17 | 57.20 | 61.69 |
| ditto | ... | ... | ... | 72.51 | 54.52 | 63.52 |
| ditto | ... | ... | ... | 63.08 | 54.24 | 58.66 |
| ditto | ... | ... | ... | 67.61 | 49.07 | 58.34 |
| ditto | ... | ... | ... | 58.87 | 57.75 | 58.31 |
| ditto | ... | N. | W. | 54.42 | 55.23 | 54.83 |
| ditto | ... | ... | ... | 49.12 | 54.39 | 51.76 |
| ditto | ... | ... | ... | 49.74 | 45.74 | 47.74 |
| ditto | ... | ... | ... | 53.36 | 49.13 | 51.25 |
| ditto | ... | ... | ... | 52.24 | 46.31 | 49.28 |
| 27th ditto | ... | ... | ... | 45.35 | 59.43 | 52.39 |
| ditto | ... | ... | ... | 52.04 | 49.19 | 50.62 |
| ditto | ... | ... | ... | 38.57 | 65.71 | 52.14 |
| ditto | ... | ... | ... | 38.18 | 44.00 | 41.09 |
| ditto | ... | ... | ... | 49.33 | 60.00 | 54.67 |
| ditto | ... | ... | ... | 46.15 | 66.63 | 56.39 |
| ditto | ... | ... | ... | 50.60 | 62.47 | 56.54 |
| 3rd April, 1863, | ... | S. | W. | 48.95 | 46.15 | 47.55 |
| ditto | ... | ... | ... | 48.20 | 48.30 | 48.25 |
| ditto | ... | ... | ... | 52.48 | 45.40 | 48.94 |
| ditto | ... | ... | ... | 51.81 | 42.18 | 47.00 |
| ditto | ... | ... | ... | 50.95 | 51.50 | 51.23 |
| ditto | ... | ... | ... | 59.76 | 46.41 | 53.09 |
| ditto | ... | ... | ... | 59.07 | 50.57 | 54.82 |
| 4th ditto | ... | ... | ... | 50.67 | 48.58 | 49.63 |
| ditto | ... | ... | ... | 48.43 | 39.13 | 43.78 |
| ditto | ... | ... | ... | 51.83 | 41.18 | 46.51 |
| ditto | ... | ... | ... | 44.77 | 46.97 | 45.87 |
| ditto | ... | ... | ... | 48.97 | 46.26 | 47.62 |

Mean = 6 h 10 m 51.88 s

that the Survey Department was called on by the Government of India to determine the true position.

Seconds of Diurnal Results by Zenith Distances.

| DATE. | Number of pairs of observations. | Result. |
|----------------------------|--|--------------------|
| 8th February, 1863, | 3 | ^s 52.06 |
| 7th ditto, | 5 | 53.24 |
| 9th ditto, | 7 | 57.24 |
| 26th ditto, | 15 | 49.31 |
| 27th ditto, | 18 | 47.09 |
| 28th ditto, | 19 | 51.31 |
| 25th March, 1863, | 5 | 52.10 |
| 26th ditto, | 10 | 55.54 |
| 27th ditto, | 7 | 51.98 |
| 3rd April, 1863, | 7 | 50.13 |
| 4th ditto, | 5 | 46.68 |

When the Moon was north of the prime vertical, 74 pairs of observations were taken, result..... = 52.57
 When the Moon was south of the prime vertical, 27 pairs of observations were taken, result = 52.12
 When the Moon was east of the meridian, 52 pairs of observations were taken, result = 51.50
 When the Moon was west of the meridian, 49 pairs of observations were taken, result = 50.44

LIBRARY.

The following additions were made to the Library since the meeting held in February last.

. The names of Donors in capitals.

Presentations.

Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften Philos.-Historische classe; Band LV. Hefte I.—III. Math.-Naturwissenschaftliche classe; Band LV. Hefte I.—II. :—K. K. AKADEMIE DER WISSENSCHAFTEN, WIEN.

Proceedings of the Royal Society of Edinburgh for 1866-67.—
THE ROYAL SOCIETY OF EDINBURGH.

Actes de la Société D'Ethnographie 12^e Liv.—THE ETHNOGRAPHICAL SOCIETY OF PARIS.

Transactions of the Royal Society of Edinburgh Vol. XXIV. part III.—THE EDINBURGH ROYAL SOCIETY.

Proceedings of the Royal Institution of Great Britain, Vol. IV. Parts V. and VI.—THE ROYAL INSTITUTION.

Zeitschrift der Deutschen Morgenländischen Gesellschaft, Bände XIX. XX. and XXI.—THE EDITOR.

Proceedings of the Natural History Society of Dublin Vol. IV. parts II. and III.—THE NATURAL HISTORY SOCIETY OF DUBLIN.

Proceedings of the Academy of Natural Sciences of Philadelphia for 1865 and 1866.—THE PHILADELPHIA ACADEMY OF NATURAL SCIENCES.

Selections from the Records of the Government of India, Foreign Department Nos. LXI. and LXII.—THE GOVERNMENT OF INDIA.

Purchased.

The Quarterly Journal of Science No. XVII.

Abhandlungen für die Kunde des Morgenlandes, herausgegeben von der Deutschen Morgenländischen Gesellschaft, Band IV. 1—5.

Indische Studien X. 1, 2, 3.

Hewitson's Exotic Butterflies, part 65.

Reise der Oesterreichischen Fregatte Novara um die Erde in den Jahren, 1857-59, Zoologischer Theil, Mollusken.

The Edinburgh Review, January, 1868.

The Westminster Review, January, 1868.

Revue des Deux Mondes, 1st January, 1868.

Journal of the Statistical Society of London, Vol. XXX. part IV.

The Annals and Magazine of Natural History, No. 68.

Comptes Rendus Nos. 25, and 26, 1867.

Calcutta Review, February, 1868.



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR APRIL, 1868.

A monthly general meeting of the Asiatic Society of Bengal was held on Wednesday, the 1st instant at 9 p. m.

Dr. Oldham having declined to take the chair as President, it was unanimously resolved, on the proposition of Mr. Blanford, that the Honorable J. B. Phear, Vice-President, do take the chair.

Mr. Phear took the chair accordingly.

The minutes of the last meeting were read and confirmed.

The following presentations were announced :—

1. From Bábu Kedáranátha Banerji. A copy of *Venísamhára Nátaka* of Bhattanáráyana.

2. From Captain T. C. Anderson. A copy of *Proverbial Philosophy of Cats*, by the donor. A Copy of some Spanish Proverbs, collated by the donor. A copy of *Last Words of a few Celebrities* (concluded) by the same. A copy of 'Ubique,' being war services of all the officers of H. M.'s Bengal Army, by the same. A copy of the Order of the Victoria Cross, by the same.

3. From the Minister of Foreign Affairs, Paris. A copy of 'Le Livre des Rois, par Abou'l Kásim Ferdousi, publié, traduit et commenté par M. Jules Mohl; Cinquième Tome.'

The following gentlemen, duly proposed and seconded at the last meeting, were balloted for and elected as ordinary members.

H. S. H. Prince Frederic of Schleswig-Holstein.

Cumára Pramathanátha Ráya of Digápati.

W. M. Smith, Esquire.

Bábu Bholánátha Chandra.

Colonel H. Hyde, announced by a mistake of his agent as withdrawn, was reinstated at his request, in the member list.

The following gentlemen were announced as candidates for ballot at the May meeting, as ordinary members.

J. Baynes, Esq., Calcutta, proposed by Mr. Scott, seconded by Dr. Colles.

T. E. Coxhead, Esq., C. S., Meherpur, Nuddea, proposed by Mr. Giles, seconded by Mr. H. F. Blanford.

A. Pirie, Esq., Professor, Doveton College, proposed by Mr. Blochmann, seconded by Mr. G. Robb.

C. D. Field, Esq., proposed by the Hon. J. P. Norman, seconded by the Hon. J. B. Phear.

F. W. Peterson, Esq., Bullion Department, Mint, proposed by Mr. Blochmann, seconded by Mr. G. Robb.

The following gentlemen have intimated their desire to withdraw from the Society.

The Hon. L. S. Jackson; J. Harris, Esq., Calcutta; C. U. Aitchison, Esq., C. S., Lahore.

The following resolution of the Council was read.

“Resolved unanimously.

“That the following letters from Dr. Oldham be read at the next general meeting of the Society.”

“To the Members of Council of the Asiatic Society of Bengal.

“Calcutta, March 18th, 1868.

“GENTLEMEN,—I have to thank several of you for meeting me yesterday to consider the circumstances attendant on the election of myself as President and of other Officers on the 15th January last. You are aware that no question was raised as to the fact that Rule 47 of the Bye-laws had not been complied with on that occasion; no excuse or cause for the omission given; no assertion of ignorance of what that law required. It was simply treated as an informality so trivial as to call for no notice, and it was even sought to be defended by showing that several other Rules had been systematically neglected!! The fact, that the Meeting had not been summoned, and consequently not held, as required by the laws of the Society, and that this was allowed to occur with the knowledge of what those Rules required, was placed beyond a doubt.

“A resolution was passed, which, with all respect I am obliged to say, simply begged the question. No one ever had doubted, no one could

doubt, the legality of the Meeting, or of its decisions, if it were 'held in accordance with the Bye-laws of the Society.' But this is precisely what it confessedly was not. The opinion, therefore, given by the Council, based, as it avowedly was, on this totally unsound premises, is valueless. The process of reasoning by which the individual statements of every Member present, that Rule 47 had not been complied with, were converted into a collective assumption that the Meeting was 'in accordance with the laws of the Society,' is to me unintelligible. Nor can I admit the force of the argument, though I can understand it, which preferred the ignoring of those laws to openly confessing that a 'trivial informality' had occurred.

"On matters of opinion, I am very willing to be guided by the better judgment of others; on matters of fact, I am compelled to form and act on my own. Indeed the facts are undisputed, and no interpretation of them is needed.

"The principle sought to be established, that where an error has occurred, (for which the remedy is extremely simple) it is better to gloss it over, and say nothing about it, than at once to declare the neglect and rectify it, is one which may possibly be successfully acted on by your Council, but which the experience of every other Society in the world, I believe, has shown to be inevitably productive of failure.

"The duties of the President are defined by the Rules under which he is appointed, and under which alone he can hold office, to be (Rule 87) * * * 'to execute or see to the execution of the Rules and Orders of the Society.' Yet the very first act requested of me by the Council, is to see that one of those Rules affecting the constitution of the Society be deliberately and knowingly violated! Gentlemen, I very respectfully, but very decidedly, decline to do so.

"No amount of opinions or glossing can alter this simple fact. I cannot therefore adopt the views of the Meeting of yesterday in this way. But in another way I am glad to be able to meet the wishes of some of the Members. However intended, the resolution passed yesterday was, under the circumstances, tantamount to the expression of a desire that I should not be President. I am rejoiced to be able to assure the Meeting and the Council generally that believing I was not duly elected, I shall certainly not act as President; unless the elective

body (the Society, not the Council) see fit to call upon me, constitutionally, to do so, when I shall be happy to devote my best efforts to their service.

"The requisition sent to me personally as President, calling for a Special General Meeting in accordance with Rule 63 to 'alter, annual, or confirm, as to said Special Meeting may seem fit, the proceedings of the Meeting of January 15th, 1868, such Meeting not having been held in accordance with the Rules of the Society'—has been returned to the requisitionists with a statement that as I am not President I have no power in the matter."

"I have the honor to be,

"GENTLEMEN,

"Your very obedient Servant,

THOMAS OLDHAM.

"*To the Secretary Asiatic Society of Bengal.*

"*Calcutta, March 27th, 1868.*

"DEAR SIR,—As it will be necessary to give to the members of the Asiatic Society, a reason why I have not assumed the office to which they supposed they had elected me, I beg to send you a copy of letter to them giving my reasons, which, if thought desirable, can be read to the meeting of the Society.

"Yours truly,

"THOMAS OLDHAM."

"*To the Members of the Asiatic Society of Bengal.*

"*Calcutta, 7th March, 1868.*

"GENTLEMEN,—On my return to Calcutta yesterday evening, I found that, during my absence, at a meeting purporting to be the Annual General Meeting for the election of Officers, &c., held on the 15th of January 1868, I had been almost unanimously selected as President of your Society for the coming year. I have on more than one occasion previously declined to allow myself to be considered a candidate for the Chair of the Society, believing the fact of my not being a permanent resident of Calcutta in itself a sufficient disqualification. And still holding this view, I had recently stated to several my great unwillingness to accept the office. But I should be indeed unmindful of the kindness of those who, with the full knowledge of this, still

elected me, did I not under the circumstances sink my own opinion on this point, and endeavour to justify the confidence placed in me, by devoting my best efforts for the benefit of the Society.

"I should therefore, have accepted the office of President with just pride; but that, as I believe, the meeting of the 15th January 1868, was held in direct contravention of the Bye-laws of the Society (Bye-law No. 47*), that its proceedings are at any moment open to question, and that I have, therefore, as in consequence of that supposed election, no right whatever to assume the office.

"No one can be more fully alive than I am to the likelihood, I might say, to the certainty, of oversights occurring in conducting the business of such a Society; and of occasional apparent disregard of the laws resulting from such oversights. And from the conviction that it might have been an oversight, I took no objection on a former occasion when a similar case occurred. But in the present instance, there was no oversight, there was warning beforehand, and abundant knowledge of the requirements of the laws. Any neglect to comply with them was therefore *knowingly* committed. The wishes of those who selected me have been thus frustrated, and I am compelled to decline accepting the honor intended to be conferred on me.

"It may be an inconvenient opinion, but it is a deliberate one confirmed by experience in the working of other Societies as Member, Secretary or President, that success in the conducting of such a body is *impossible*, excepting the laws established for its constitution, and to which every Member on admission declares his adhesion, be acted up to. Those laws may be unnecessary, inexpedient, or even simply inconvenient, and if so, the sooner the needless, inexpedient, or inconvenient provisions be altered the better. But as the only claim which the executive of any such Society has even to ask for the subscriptions of its Members (without which the Society cannot work), is a strict adherence to the constitution of the Society, every knowing violation of the laws of such constitution is only a misleading of the Members. And certainly, the constitutional right of every Member to take part, if he chooses, in the election of Officers, and to see that all or any undue influence be prevented by that election being carried on only

* "47. Notice of the annual meeting shall be inserted in two or more Newspapers one week at least before the day of meeting."

after due public notice, is not the least important right attached to membership of the Society.

"I feel that the chair of the Asiatic Society of Bengal is one of the highest scientific rewards which can be obtained in India. And I most fully appreciate the honor intended for me by selection for that office. I should, however, be false to myself, and false to the Members of the Society, if with the strong conviction I hold as to the inevitable results of such infringements of the laws of the Society, knowingly committed, I were to allow any personal considerations of honor to outweigh my convictions.

"Under these circumstances, I do not therefore, hesitate to decline assuming the responsibilities of an office to which, as I believe, I have not been legally elected, being still ready and willing, as I have always been, to exert myself for the advantage of your Society, as constituted, to the utmost of my power.

"March 18th, 1868.

"The forgoing letter was intended for immediate circulation to the Members of the Society. On the 12th instant I received the official notification of the election, *dated 6th February*, (which had miscarried and had been returned to me from Madras). And being naturally anxious to remedy the lache which had occurred, and yielding to the views of others, I immediately requested a special meeting of the Council. This took place on the 17th instant. I stated my information, as to the facts—these were in no way questioned. I stated also my determination as above, not to accept the office unless such irregular election were duly confirmed, and I pointed out the simple mode of remedying the mistake by a special general meeting of the Society, showing that under Rule 63—such could be called by the Council, or by the President, on a requisition from six Members of the Society. I further stated, that I had already received such a requisition, properly signed, which, if President, I would have no option but to comply with. And I left it to the Council to say what they would do. After discussion, the following resolution was passed that—'In the opinion of the Council as *Dr. Oldham was elected President at a general meeting held in accordance with the Bye-Laws of this Society*, his election is legal and valid, notwithstanding some informality in the notices convening the meeting which appear to

have been issued only three days instead of seven days before the day of election. The Council are informed that the irregularity of the notices was remarked by several Members of the Society before the meeting, but no one at the time raised any objection to the notices of the meeting, that the business should not be proceeded with in the usual course.'

"And the meeting separated.

"This will show that I am still unable to accept the office.

"The respect due to my fellow-members of the Asiatic Society has made it necessary to make them acquainted with the facts. I cannot submit to be a party to an avowed neglect of the rules affecting all your officers, which is treated as of no importance, being one of a number of other departures from the laws of your Society."

"I have the honor to be,

"Gentlemen,

"Your very obedient Servant,

"THOMAS OLDHAM."

The Chairman in giving notice of the following motion on behalf of the Council remarked—

That in the absence of a President, it devolved upon him as senior Vice-President to explain to the Society the action which the Council had felt it incumbent on them to take, upon the receipt of the letters which the Secretary had just read. He premised, however, that according to the rules of the Society, (to which he referred specifically,) the subject of the communication, which he was about to make, could not be treated as matter of discussion at this meeting. But it was necessary, under those rules, that a formal notification of the proposals of the Council should now be made to the Society in order that they might be legitimately considered and determined upon at a subsequent Special Meeting to be convened for the purpose. He then stated shortly the facts connected with the election of Dr. Oldham as President of the Society, namely,—that he was nominated to that post in the usual manner by the almost unanimous voice of the Council, and that he was afterwards elected by the Society, at the Annual Meeting, which is fixed by the rules to be held not later than the third Wednesday of January for the election of officers, and which this year took place on the 15th of that month. At

that time, Dr. Oldham was absent from Calcutta, and he did not receive notice of his election until his return some weeks later. When however, he got this notice, he objected that the advertisements of the Annual Meeting of the 15th January had not been published a sufficient number of days before the meeting according to the rules which specified seven days in that respect, while only three had actually elapsed between the publication and the meeting. On this ground he maintained that the meeting at which he had been elected was no proper meeting for the election of officers, and consequently his pretended election was void. After this, a special meeting of the Council was held at the request of Dr. Oldham, at which he was present and stated his views. The Council then unanimously resolved that notwithstanding the irregularity in question relative to the advertisements, the election of the President was perfectly valid, and they called upon Dr. Oldham to say whether he would accept the office or not. Dr. Oldham's answer is exhibited in the letters now placed before the Society. In substance, he denies that any real election has yet taken place for this year, and demands that proceedings should now be taken *de novo* for the purpose of effecting one. It was impossible for the Council to concede to this. In their view, the correctness of which, he [the Chairman] was not now concerned to discuss, there had been a perfectly valid election, and the Council could of course only act according to the facts as they themselves saw them. Under these circumstances, they would have been justified, no doubt, as the executive body of the Society, in treating Dr. Oldham's behaviour as amounting virtually to non-acceptance of the office tendered to him. If they were right, the Society had offered Dr. Oldham its highest office, and he had not within a reasonable time signified his acceptance of the offer. The Council might therefore on their own responsibility have taken the necessary steps for the election of another person. They have thought it better, however, to lay the whole matter before the Society, while at the same time they have considered it to be their duty to recommend the Society to act in it in accordance with the view, which they, after much consideration, have already taken. As the organ of the Council, he therefore now begged to notify to the Society that Wednesday, 6th of May, had been fixed as the day for a Special Meeting to

consider this matter, and that the Council would then recommend the adoption of the following resolution :—

“ That the office of President be declared to be vacant, inasmuch as Dr. Oldham has declined to accept it or to assume its duties, after having been duly elected thereto, and informed of that election.”

He would add that one great advantage to be gained by the Council thus taking the initiative in the matter, would be the saving of time which would result, because it would thus under the rules be unnecessary to make a reference back to the Council before a final decision could be come to, as would otherwise have to be done.

Dr. Oldham having received permission of the meeting to make some remarks, proceeded to give notice.

“ That at the special general meeting on the first Wednesday in May on the resolution of the Council just read being proposed, he will move as an amendment, that the words commencing ‘ after he had been duly elected &c.’ to the end of the resolution, be omitted, being inconsistent with the facts.”

Sir R. Temple asked of the Chairman whether this meeting was competent to pass a vote confirming the election at the annual general meeting.

The Chairman replied that undoubtedly it was not so competent.

Mr. E. C. Bayley then asked, whether a Committee elected by the Society could not decide the question ‘ whether the irregularity which had been committed, rendered the election void or voidable.’

The Chairman replied that personally he entertained no doubt that the election had not been rendered void or voidable, but that the whole question might be discussed by the Society at the Special General Meeting.

Mr. Justice Norman remarked that such informalities of notice do not invalidate parliamentary elections.

Colonel R. Strachey then gave notice that at the Special General Meeting of 6th May, he will move as an amendment to the resolution of the Council—

“ That the informality in the publication of the notice of the last Annual General Meeting of the Society is not of a nature to invalidate the election of Dr. Oldham as President, and that he was therefore duly elected and is the President of the Society.”

The Council reported in favour of a recommendation made by the Philological Committee, to publish the *Muntákháb ul Labáb* of Kháfí Khán and the *Maásir-i-Alamgiri* in the Persian Series of the *Bibliotheca Indica*.

The following note by Major Lees was laid before the meeting.

"The *Badshahnamah* and *Alamgirnamah* having been completed, it becomes necessary to select two other works for the Persian Series; and these two have already been provisionally accepted by the Philological Committee; they are the *Muntakhab ul Labab* commonly called *Kháfí Khán*, and *Maasir Alamgir*.

"I will take the latter first. It is known that Alamgir issued strict injunctions in the first year of his reign, that no historian should chronicle the events of his reign. Up to this period we have the history of Mahommad Kázim which was compiled by his order. This is styled the *Alamgirnamah*, and has been published already by the Society. For the latter period of this long reign, we have as yet published nothing; and the two works which are mentioned, are I think the best available. The *Maasir Alamgiri* is a small work, and will not occupy more than three and a half to four fasciculi. The author Muhammad Sáki Mustaid Khan, held an office at the court; and had capital opportunities of obtaining good information, besides which, it is supposed that he made memoranda during the lifetime of Aurangzeb which he afterwards employed for his history. The first portion of his history is an abridgment of Muhammad Kazim's history, and it might be omitted; but there seems to be an objection to the publication of mutilated editions, and many think that it injures the sale. It certainly does in India.

"But of far greater importance for the history of this and the subsequent period, is the history of Kháfí Khán. This is truly a noble history, and its publication will add considerable lustre to the Persian Series. It has been used by Elphinstone and other English historians; but very partially, and its use, so far from having been superseded, has been rendered the more necessary by the frequent references we find to this work in their pages. The book is so well-known, that it is unnecessary to give an extended notice of it. Suffice it to say, that it embraces the period from Tímúr till the 14th year of the reign of Muhammad Shah. But from the times of

Tímár to Shah Jehan, the subject is treated in the abstract, the history becoming enlarged gradually as the author approaches his own times. The first portion, however, for the reasons before assigned, should be printed as well as the last. The author was certainly the most competent historian of his period, and his criticisms upon other historians are not without value. In the publication of this work, moreover, the Society will secure the history of a period of 26 years after the death of Aurangzeb, during which Kháfi Khán was a contemporary writer. During this interval seven kings reigned. Azim Shah, Bahadur Shah, Shah Aalam, Azim us-Shein, Jehandar Shah, Farokshir, Rafi ud Diraját, and Mohammed Shah. Some of these kings only reigned a few months, and of the whole period of 26 years, 14 belong to Mahomnad Shah. Manuscripts of Kháfi Khan are very numerous. There are four in the Society, two of which are complete, and two or three more could doubtless be obtained in Calcutta and the neighbourhood, but *perfect* copies, *i. e.*, good and accurate copies are rare, and the discrepancies between some of the copies I have seen are so great as to warrant the supposition that there were two editions of the work. Some care therefore will be required in editing this valuable history. Maulawi Kabir ud-din and Maulawi Gholam Qadir, the two resident Muushis of the Madrassah, would, I think execute the work well. The former has an acquaintance with the requirements of critical editing, and understands the value of variations in readings, and how to discriminate between copyist's errors, and doubtful texts; and the latter is a good Persian scholar.

"For the smaller works the Maasi i Alamgiri, Maulawis Abd al Hye and Ubd ur Rahím will perform the duties of editors I think efficiently. The former has a knowledge of English, and has edited and assisted in the editing of very many texts for the Society."

The following letter from Dr. R. H. Curran forwarding pieces of gold and silver found under the skin of a Burmese convict at the Andaman Islands, was read.

Port Blair, Andamans.

March 4th, 1868.

"SIR,—I have the honor to forward for the Asiatic Society, the enclosed pieces of gold and silver which I accidentally found whilst

making a *post mortem* of a Burman convict, who was hanged here, in December last. There were twelve pieces of each metal enclosed in separate but dense capsules beneath the skin.

"On proceeding to open the chest, I found the first two pieces of gold on either side beneath the integuments. The remaining gold pieces were found on each arm, and the silver in the forearms. There was no mark on the outer skin to indicate that any foreign body lay beneath, but by carefully feeling along the arms, small hard bodies could be detected.

"On enquiring, I find Burmans are in the habit of inserting these bodies, as charms for sickness, or for the purposes of averting impending danger. The man from whom these were removed, was known in Burmah, as a desperate and dangerous character. The charms did not appear to have the desired effect.

"There is some writing on those coins, but I am unable to make it out."

(Sd) R. H. CURRAN.

The Secretary then read the following letter from Mr. Mulheran, describing the Cromlechs of Central India: communicated by Colonel H. L. Thuillier.

Camp, 12 miles W. of Hanye.

4th February, 1868.

"MY DEAR COLONEL,—I have much pleasure in acknowledging your letter of the 12th Instant and hasten to forward prints from the Photographs to which you refer.

"Cromlechs of the form illustrated in *Photograph No. 4* [Pl. I. fig. 2] are found in great abundance on both banks of the Godavery in the neighbourhood of Albaka, and in the low ridges west of the canal above Duma-gadium. The majority of the Cromlechs consist of a number of upright stones sunk into the ground in the form of a square, and covered with one or two large slabs of sandstone. In some, two bodies, or rather their remains, appear to have been interred. In others only one. The crosses are found in the neighbourhood of Malûr, and Katapur, two villages on the Nizam's side of the river. I have not seen the Cromlechs near Albaka, but have been informed by those who have, that no crosses are found near them. The cross at Malûr has both of the arms broken,

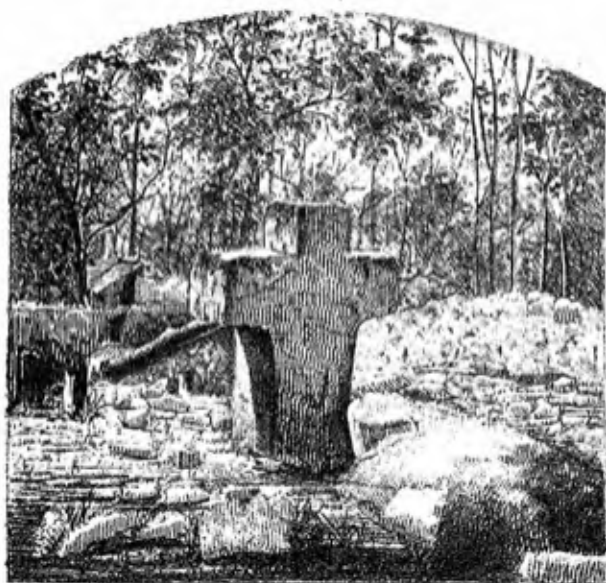


Fig:1.

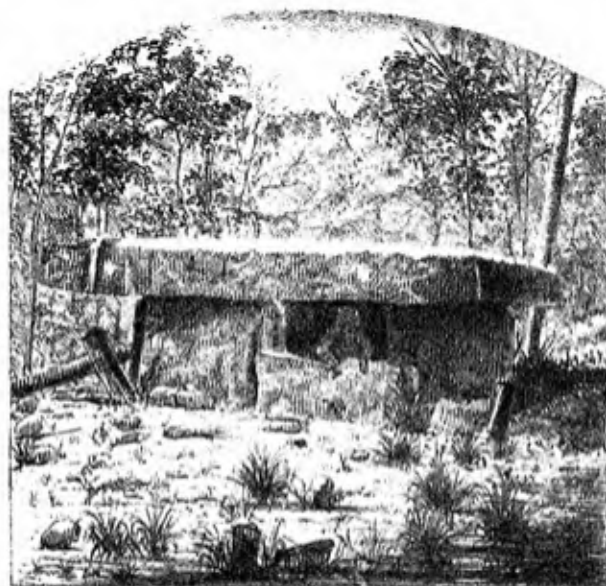


Fig:2

*Stone cross and Kist at Kalapūr
CENTRAL INDIA.*

Lith'd from a Photograph by Kallu Does Paul Student Govt School of Art Cal.



one near its stem, and is lying on the road to the cave under the hill. The crosses at Katapar with one exception are uninjured. All are situated to the right of the Cromlechs near which they have been erected. Judging from the one lying exposed at Malúr, they are all about 10 feet in length, although only 6 and 7 feet appear above the ground. They consist of one stone, and are all of the Latin form. No information of any kind could be obtained regarding the people by whom the crosses and Cromlechs were erected. There can, however, be no doubt that the crosses are memorials of the faith of Christians buried in their vicinity; but by whom erected, and at what time, has still to be ascertained. The isolation of the broken cross at Malúr, if not erected as a road-side memorial, is very puzzling. The whole of the Cromlechs at Malúr are found near the summit of the ridge, which is about 250 feet above the path leading to the cave. Assuming the cross to have been broken while in transit to the ridge, it is difficult to understand the reason of its being found on the side opposite to that on which the Cromlechs are situated. If broken while in transit to the cave, then the cave itself must be another form of the Cromlechs crowning the hill, and if so, it is the largest, and most interesting of the whole series. My own impression is, that the Malúr cross wherever erected, was thrown down after the conversion of the cave into a temple by Brahmins from the neighbourhood of Badrachalam. In all probability the Brahmins know nothing regarding the original use of the cave, and have not, in consequence, disturbed the cement used to preserve the remains below. What struck me as peculiar in this excavation, was its small entrance. The surface of the rock above is carved to the height of 10 or 12 feet. The cross is also slightly carved, but although similar in form to those at Katapar, it is less angular in its general outlines.

"I enclose Captain Glasfurd's note to me about the crosses, from which you will see that he first drew my attention to them, and suggested my taking the Photographs enclosed. If I am not mistaken he sent drawings, and a packet of the implements, rings, and utensils found in two of the Cromlechs that he opened, to the Asiatic Society,* of which he is a member.

"I am taking a set of Photographs of the wild people inhabiting the

* No such donation has been received by the Society.—Ed.

Chundwara ridges, including the Chiefs (Gond) recognised by Government, and in possession of the Jagheers of Hurrye, Sonpur, and Pratāpghar. The Chiefs of Hurrye and Sonpur are stone blind, and pitiable objects, as you will see when the Photographs reach you. Their sons appear to have inherited the disease, and will in time lose their sight, the eyes of one being already affected. As soon as I have completed the set, I will send you a packet of prints. The uncombed heads of the wild Gond women will astonish you. Major Wood, the Deputy Commissioner, has written to all the Chiefs to assist me, and I find all exceedingly civil and obliging. I am getting on very rapidly with my work, the forest fires not yet having interfered with my observations. I have only one more principal station to visit. All the rest are secondary points, but I am observing verticals of all, and will furnish a complete table of heights.

Yours very sincerely,

J. MULHERAN.

A discussion took place on the subject of this letter, and the accompanying photographs, in which Mr. Blanford, Dr. Colles, Dr. Oldham, Mr. Bourke, Mr. E. Bayley and others took part.

The receipt of the following communications was announced.

1. A memorandum on Elephants by Lieut. J. Johnstone.
2. On the birds of the Goonah District by Dr. G. King.

The Chairman announced, the night being far advanced, that unless the contrary were particularly desired by the members, the reading of the following papers announced for this evening would be postponed to the meeting in May.

1. A memorandum on Elephants.
2. Extracts from the Narrative Report of a route Survey from Nepal to Lhasa.

LIBRARY.

The following additions were made to the Library since the meeting held in March last.

. The names of Donors in capitals.

Presentations.

Jahrbuch der Kaiserlich-Königlichen Geologischen Reichsanstalt, Wien 1866, No. 4;—The K. K. GEOLOGISCHEN REICHSANSTALT.

Magnetischer Atlas gehörig zum Magnetismus der erde von C. Hansteen Professor, Christiania 1819.—DET KONGELIGE NORSKE UNIVERSITET-I-CHRISTIANIA.

Meteorologiske Iagttagelser paa fem telegraestationer ved Norges Kyst reducerede og Sammenstillede af J. J. Astrand, Første og anden aargang udgivne af det Kongelige Norske Frederiks Universitet ved C. Fearnley.—DET KONGELIGE NORSKE UNIVERSITET I CHRISTIANIA.

Meteorologiske Iagttagelser i det Sydlige Norge 1863, 1864, 1865, 1866.—DET KONGELIGE NORSKE UNIVERSITET I CHRISTIANIA.

Meteorologiske Iagttagelser paa Christiania Observatorium 1866.—DET KONGELIGE NORSKE UNIVERSITET I CHRISTIANIA.

Nyt Magazin for Naturvidenskaberne udgives af den Physiographiske Forening i Christiania ved M. Sars og Th. Kjerulf.—DET KONGELIGE NORSKE UNIVERSITET I CHRISTIANIA.

Morkinskinna Pergamentsbog fra Første Halvdel af det Trettende Aarhundrede Indeholdende en af de Ældste optegnelser af Norske Kongesagaer. Udgiven af C. R. Unger.—DET KONGELIGE NORSKE UNIVERSITET I CHRISTIANIA.

Forhandlinger i Videnskabs-Selskabet i Christiania, Aar 1865.—DET KONGELIGE NORSKE UNIVERSITET I CHRISTIANIA.

Om Givaisme i Europa af C. A. Holmboe.—THE AUTHOR.

Om Tallene 108 og 13 af C. A. Holmboe.—THE AUTHOR.

Det Kongelige Norske Frederiks Universitets Aarsberetning for Aaret, 1866, Med. Bilage.—DET KONGELIGE NORSKE UNIVERSITETS I CHRISTIANIA.

Index Scholarum in Universitate Regia Fredericiana centesimo nono ejus semestri anno 1867 ab augusto mense ineunte habendarum.—DET KONGELIGE NORSKE UNIVERSITETS I CHRISTIANIA.

Études sur les Affinités Chimiques par C. M. Guldberg et P. Waage.—DET KONGELIGE NORSKE UNIVERSITETS I CHRISTIANIA.

Untersuchungen über den Magnetismus der Erde von C. Hansteen.—DET KONGELIGE NORSKE UNIVERSITETS I CHRISTIANIA.

General report on Public Instruction in the Lower Provinces of the Bengal Presidency for 1866-67.—THE DIRECTOR OF PUBLIC INSTRUCTION, LOWER PROVINCES.

Proceedings of the Royal Society of London, No. 97.—THE ROYAL SOCIETY OF LONDON.

Über ein Fragment der Bhagavati; ein beitrage zur kenntniss der heiligen litteratur und sprache der Jaina von A. Weber; Zweiter Theil.—THE AUTHOR.

Zeitschrift der Deutschen Morgenländischen Gessellschaft, Band XXI. Heft IV.—DEUTSCHEN MORGENLANDISCHEN GESELLSCHAFT.

Wissenschaftlicher Jahresbericht über die Morgenländischen Studien 1859 bis 1861 von Dr. R. Gosche.—DEUTSCHEN MORGENLANDISCHEN GESELLSCHAFT.

La Femme dans l'Inde Antique; études morales et litteraires, par Mlle. Clarisse Bader.—MLLE. CLARISSE BADER.

Atti della R. Accademia delle Scienze di Torino, Vol. II. Disp. 4-7.—ACCADEMIA R. DELLE SCIENZE DI TORINO.

Memorie della Reale Accademia delle Scienze di Torino, Vol. XXIII.—ACCADEMIA R. DELLE SCIENZE DI TORINO.

Almanach der Kaiserlichen Akademie der Wissenschaften, XVII.—KAISERLICHEN AKADEMIE DER WISSENSCHAFTEN ZU WIEN.

Fontes Rerum Austriacarum, Oesterreichische Geschichts Quellen, Band XXVII.—KAISERLICHEN AKADEMIE DER WISSENSCHAFTEN ZU WIEN.

Archiv für Oesterreichische Geschichte, Band XXXVIII. Heft I.—KAISERLICHEN AKADEMIE DER WISSENSCHAFTEN ZU WIEN.

Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften, Philos.-Histor. Classe, Band LVI. Hefte I.—III. Mathematisch-Naturwissenschaftliche Classe, Band LV. Hefte III.—V, Band LVI. Hefte I.—KAISERLICHEN AKADEMIE DER WISSENSCHAFTEN ZU WIEN.

The Proverbial Philosophy of Cats; by Captain T. C. Anderson.—THE AUTHOR.

Some Spanish Proverbs collated by Captain T. C. Anderson.—THE EDITOR.

Last words of a few celebrities (concluded); by Capt. T. C. Anderson. THE AUTHOR.

Ubique; War services of all the officers of H. M.'s Bengal Army; by Captain T. C. Anderson.—THE AUTHOR.

The Order of the Victoria Cross for Valour; by Captain T. C. Anderson.—THE AUTHOR.

Venisamhāra-Nātakam of Bhaṭṭanārāyaṇa.—B'ABU KEDA'ĀNA'THA
BANDOPA'DHYA'YA.

Actes de L'Académie Impériale des Sciences, Belles Lettres et
Arts de Bordeaux, 3, 1867.—THE ACADEMY.

Report on the Land Revenue Administration of the Lower Pro-
vinces for the Official year 1866-67.—THE GOVERNMENT OF BENGAL.

Selections from the Records of the Government of India, Foreign
Department Nos. LXI. and LXII.—THE GOVERNMENT OF BENGAL.

Bombay Sanskrit Series No. I. Panchatantra.—THE EDITOR.

Purchase.

The Ferns of British India; by Captain R. H. Beddome, Part
XVIII.

Pratna Kamra Nandini, No. 7.

Revue des Deux Mondes, 15th January, 1868.

Revue et Magasin de Zoologie, No. 12, 1867.

Revue Archéologique, I. 1868.

Comptes Rendus, No. 27, 1867 and No. 1, 1868.

Journal des Savants, December, 1867.

Roth and Böhtlingk's Sanskrit Wörterbuch, Lief, 36.





PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR MAY, 1868.

In pursuance of Notice issued by the Council, a Special General Meeting of the Society assembled on May 6th, 1868, at 9 P. M.

It was proposed by the Hon'ble J. P. Norman, and seconded by Dr. Colles, "That the President do take the chair."

After some pause, Mr. Oldham said, that if he were intended by the words of this proposition, he would be very happy to take the chair, as Mr. Oldham, if the meeting so wished, but that the question really to be decided was, whether he were President or not.

Dr. Colles then proposed as an amendment, 'That Mr. Oldham do take the chair.' This was put to the vote and lost. It was then proposed by Mr. H. F. Blanford and seconded by Mr. Mackenzie, and carried, 'That the Hon'ble J. B. Phear do take the chair.'

The Chairman then called on the General Secretary to read the minutes of the last ordinary meeting which he proceeded to do, when it was proposed by Mr. Oldham and seconded by Mr. Scott, that the business of the special meeting summoned for 9 o'clock P. M., be proceeded with before that of the ordinary meeting—Carried.

The Meeting was accordingly made special.

The Chairman said that it was his duty, as representative of the Council, to propose to the Meeting the resolution which the Council recommended for adoption. But he thought that, as he occupied the Chair that evening, it would be unbecoming in him to offer any remarks either in favour of, or against, the resolution. He would

therefore confine himself to calling on the Secretary to read the letters from Mr. Oldham. (These have been already published, see *Proceedings* for April, 1868.) He then proposed on the part of the Council, the resolution itself in the following words :—

“That the Office of President be declared to be vacant, inasmuch as Dr. Oldham has declined to accept it or to assume its duties, after having been duly elected thereto, and informed of that election.”

A question being raised, as to whether this resolution required to be seconded, it was moved by Mr. Bourke, and seconded by Dr. Colles, and carried, “That resolutions coming from the Council do not require to be seconded.”

After a considerable pause, Mr. Bourke wished to propose an amendment on the resolution of the Council, but the Chairman, on hearing it, stated that it could not be accepted as an amendment. Being a substantive proposition in itself negating the original proposition, it might be considered after the resolution had been disposed of, but not till then. Mr. Bourke would wish to alter the wording, but the Chairman not accepting this either, Mr. Bourke said his only course then was, to adopt unquestioned precedent, and frame the amendment out of the actual words of the resolution—He moved,

“That the word ‘not’ be inserted between the words ‘be’ and ‘vacant,’ and also the word ‘not’ between the words ‘has’ and ‘declined.’”

Mr. Oldham moved the amendment of which he had given notice : “That the words of the resolution, from ‘after having been’ &c., to the end be omitted, being inconsistent with the facts.” The question for the meeting to decide was, whether there had been a due election of officers, he declined to assume the duties of the Presidentship *until* a decision on that point had been come to by the only competent body,—the Society—but he had not declined the office *after* such due election.

Dr. Waldie wished to propose, “That the Society do not consider the informality in the proceedings of the last Annual General Meeting to be of such a nature as ought to vitiate the proceedings of that meeting, and resolve that the election of President and Council then made, be ratified and confirmed.”

The Chairman stated that this was open to the same objection as he had already expressed with regard to others, it could not be accepted as an amendment, but might be brought forward afterwards, if it were desired.

After some discussion, in which Dr. J. B. Partridge, Mr. Oldham, Mr. Blanford, Mr. Mackenzie, Dr. D. B. Smith, and Colonel Thuillier took part. Mr. Oldham's amendment was put to the vote and, on a show of hands, was declared lost.

Mr. Bourke's amendment, "That the office of President be declared to be not vacant, inasmuch as Dr. Oldham has not declined to accept it or to assume its duties, after having been duly elected thereto, and informed of that election," was then put to the vote.

A show of hands was called for, and this amendment also was declared to be lost.

The original resolution of the Council was then put, (as above) and, on a show of hands, it also was declared to be lost.

Mr. Oldham then moved and Dr. Waldie seconded, That the proceedings of the Annual Meeting on 15th January, 1868, be confirmed. Mr. W. S. Atkinson moved as an amendment.

"That in the opinion of this meeting the informality in the publication of the notice of the last Annual General Meeting of the Society was not of a nature to invalidate the election of the President and Council, and that they were therefore duly elected, and are respectively the President and Council of the Society."

This was seconded by Dr. Colles, and was put to the Meeting and declared by the Chairman to be carried.

Mr. Blanford said that in consequence of this resolution, he begged to resign his office of General Secretary to the Society.

The Special Meeting was then dissolved.

The meeting then resolved itself into a general monthly one.

Dr. T. Oldham, having taken the chair, desired the Philological Secretary, in the absence of the General Secretary, to read the minutes of the last meeting, which were thereupon read and confirmed.

The following presentations were announced—

1. From the Royal School of Mines, through Dr. T. Oldham, a

copy of Portlock's Geological Report on Londonderry and parts of Tyrone and Fermanagh.

2. From Lieutenant-Colonel G. Mainwaring, 2 copies of a Lepcha Primer.

3. From J. S. Carlile, Esq. of Melbourne through Mr. G. Robb, a copy of a Vocabulary of dialects spoken by the aboriginal natives of Australia: a copy of *Statistiques des Mines et des Mineraux* par R. B. Smyth, and a copy of a Memorial of the Victorian Exhibition, 1866, consisting of a verse from the Holy Writ in above one hundred languages.

4. From J. Gregory, Esq. 13 pieces of silver Jayanti coins.

5. From Captain H. C. E. Ward, four specimens of *Physa Prinsippi* from Sank-ká páháda in the Mandla district.

6. From Dr. A. C. Maingay, a collection of skins of rare and little known birds from Malacca.

The following gentlemen, duly proposed and seconded at the last meeting, were balloted for and elected ordinary members.

J. Baynes, Esq.

T. E. Coxhead, Esq.

A. Pirie, Esq.

F. W. Peterson, Esq.

C. D. Field, Esq.

The following were nominated as candidates for ballot at the June meeting.

E. Bayk, Esq. C. S., Cawnpore; proposed by Mr. Grote, seconded by Dr. Colles.

Bábu Yatindramohana Thákura; proposed by Bábu Rájendralála Mitra, seconded by Mr. H. F. Blanford.

H. Reinhold, Esq.; proposed by Dr. Stoliczka, seconded by Dr. Fayrer.

Dr. C. R. Francis, for re-election; proposed by Mr. H. F. Blanford, seconded by Dr. J. A. P. Colles.

A letter from R. A. Sterndale, Esq. intimating his desire to withdraw from the Society was recorded.

The Council's recommendation for the publication of an English translation of the 'Ain-i Akbari in the Bibliotheca Indica was adopted

A letter from Sir R. Temple forwarding copies of correspondence with the Commissioner of Coorg, respecting an interesting discovery of a number of ancient Cromlechs in South Coorg, was laid on the table. Also a letter from Colonel J. T. Walker, forwarding a letter from Mr. Mulheran on the crosses and Cromlechs of Chindwara district. The reading of these papers was deferred until the next monthly meeting.

The receipt of the following communications was announced.

1. Notes on rare and little known Malayan Birds by Dr. A. C. Maingay.

2. Contributions towards a Persian Lexicography, by H. Blochmann, Esq.

3. On Solar Eclipses and the total Eclipse, August 18th, 1868. By Major F. Tennant.

The chairman stated that this paper, being of great present interest, had been, by order of Council, sent to press for immediate printing.

The following paper, postponed from the last meeting, was read by the author.

Notes on Elephants, by LIEUT. JOHNSTONE, *Supdt. Kheddas, Outtack Tributary Mehals.*

The Indian Elephant is usually supposed to be one species, differing slightly in external appearance according to the locality in which it is found.

Elephants are found in Chittagong, Burmah, Sylhet, Assam, Bhootan, Nepaul, Outtack, Chota-Nagpore, Central Provinces, Mysore and Dehra Dhoon. Of all these places Chittagong, Jynteea and Mysore are said to produce the finest kind, and Assam the worst.

The "*Elephas Indicus*" has six true, and thirteen false ribs on either side; the "*Elephas Sumatranus*," of Borneo, Sumatra and Ceylon has fourteen false ribs, the true ribs being the same in both species. I have found elephants in the Central Provinces of the latter description. Whether the Central Province elephant is to be considered a distinct species from "*Elephas Indicus*," is a question to be decided by naturalists.

The African elephant differs from the Indian species in having much larger ears and a sloping forehead; both male and female have tusks, and the specimens I have seen more resemble the "*Mirga-band*," or very light built Indian elephants, than any other. The teeth also differ from those of the Indian elephant.

In noticing the Central Province elephant, I omitted to state that in one prominent feature, it closely resembles the Ceylon elephant, viz. in the small proportion of tuskers to "macknás" (or male elephants without tusks). The habits of all elephants are the same, and all seem equally capable of being trained for the use of man.

An elephant arrives at maturity at from 25 to 30 years of age, and I am of opinion that in their wild state the average duration of life is about 80 to 100 years, though it is *extremely difficult* to ascertain this point, and I may mention that out of a herd of 30 or 40 elephants, it is not at all uncommon to find only one really old female.

The female elephant begins to breed at about 18 years of age, and goes on breeding for 40 or 50 years, giving birth to a young one about once in 5 years: this I have ascertained from careful observation.

The period of gestation varies from 18 to 24 months.

A large proportion of males never attain a large size, but are puny and stunted, though why, I cannot understand. Of those that do attain a large size, (say 1 in 10,) the smallest are always killed or turned out of the herd by the larger ones, and this of course tends to keep up the size of the breed.

It is a remarkable fact that a dead elephant is *never* found in the jungle, and therefore I believe that when about to die they retire to the most inaccessible parts of the forest.

A female elephant suckles her young till another is born. I have seen a young one of 12 years of age, sucking.

If a young one strays from its mother, and finds her again after two or three days, the old elephant will not own it, but drive it away.

Elephants copulate in *exactly* the same manner as horses, but very rarely in confinement, though I have known two or three instances. A male elephant, captured by me on January 7th of this year, covered a female while in the stockade.

In their wild state, elephants are excessively timid, and *very* rarely attack a man even in self-defence.

The average number of a herd of elephants is about 20 or 25, they have a female at their head, who leads the way; in the cold weather

three or four herds often join together; and when a female is in heat, a male joins them, otherwise the males remain apart.

Often a large male is seen attended by three or four smaller ones.

Males, when with the herd, never help to defend the others from any outward attack, but are generally the first to run.

When rivers are dry, wild elephants often scoop out little pools in the sand in which the water remains; this I have seen *myself*, and I have lately heard of elephants damming up a stream with boulders and sand, so as to keep a good supply of water for themselves.

It is a mistake shooting elephants to prevent their devastating the crops; shooting only breaks up the herds and disperses them over a large space, thereby increasing the amount of damage done.

I may observe that though the elephants of the countries I have named, all possess distinctive features of their own, still in every country you find elephants of all kinds, thus, though the "Mirgá-band" is characteristic of Assam, nevertheless I have seen animals equal to the Jyntee kind caught in Upper Assam; I have also lately seen a Kumaon elephant exactly resembling a Chittagong one. This remark does not, however, apply to the Central Provinces, as the elephants there are all of one kind, and seem to me totally distinct from those found in any other part of the Continent of India.

Midnapore, 12th March, 1868.

Mr. Ball said:—

"During the past season when engaged in a geological examination of the hilly country which separates Manbhoom from Dhalbhoom and Singhbhoom, I have frequently, on the tops of hills and in the depths of the jungles, met with traces of wild elephants. The period of the elephants' stay in that part of the country is altogether dependent on the rice crop; and as this had been cut about a fortnight or three weeks before the time of my visit, I missed seeing the elephants themselves, but found that much might be learned of their habits from an examination of their tracks.

"The natives say that a herd of at least 30 individuals come up every year from the S. E. (Satbhoom) and, while the rice is available, spread themselves along the range of hills of which Dulma (3047 feet) is the culminating point. Thence they nightly make descents on the crops of the neighbouring villages, causing great loss to the

poor Santhal and Bhumij ryots. To prevent this loss as much as possible, watchers are set; and so soon as the elephants approach, the whole village get the alarm, and with shouting, drum-beating, and brandishing of torches, they manage to drive them off.

"In some villages, I found that the ryots, in order to save any portion of their crops, had been obliged to cut the paddy while still green. There are many deserted villages from which the inhabitants have fled in fear for their lives; one of these, which I saw, had evidently become a favourite place of resort with the elephants; foot-prints and other traces of their recent presence being abundant even inside the crumbling walls of the houses.

"Occasionally the elephants commence their depredations before sunset; close to Dulna I was told of five elephants appearing one day in the rice field at about 4 o'clock.

"On most of the hills, the elephants have made paths with a gentle ascent; and the comparative ease with which, where these existed, I was enabled to do my work, made me frequently bless them and regard them, no matter what they might be to the ryots, as at least my benefactors.

"During the day the elephants feed upon several jungle trees, of which the principal, as far as I could detect from the debris, are the following:—

Branches and leaves.

Ficus Indica
religiosa
racemosa.

Bar, B.
Pipal, B.

} not very common in the
Jungle.

Phœnix acaulis

Jangly-khejur, B.

Bark only.

Cochlospermum gossypium Gol-gol.

Shorea robusta

Sál.

Bauhinia Vahlîi

Chehúr.

Butea superba

Palás

Shoots and Roots.

Bambusa stricta.

"Large gol-gol trees may often be seen torn up by the roots, and with the greater part of their bark stripped off: it is the only part of this tree eaten by elephants. Sál trees from four to six inches in diameter

are frequently broken off sharp at about four feet from the ground. Large bamboos seem to be crushed between the teeth just as a mere amusement, in fact, as a groom might chew a straw.

"In examining the foot-prints at the river ghâts and other places, I was much struck with the carelessness with which the wild elephants walk as compared with the domesticated animals; the latter, as is well known, try every step on doubtful ground, and if there is danger, refuse to proceed: the former seem constantly to make false steps and even venture upon recently made tank bunds which, in several cases, I noticed had given way under their weight."

Dr. Stoliczka said—The most prominent distinctions between the African and the Indian elephant, besides the difference in the size of the ears, were the greater frontal roundness of the head and the easier slope from near the middle of the back in the former species. Lieutenant Johnstone had noticed in the Indian elephant the variation in the number of false ribs, and in the size of the ears, and it would be very interesting to notice how far the other distinctive characters were constant. There could be little doubt that several more or less constant variations among the Indian elephants may in time be traced out. And it would be very desirable further to notice how much these variations depend upon, or are caused by, local influences and conditions of climate—by food, &c., and whether these variations are hereditary. The form of the milk-teeth should also be very carefully noted, very few observations having been made in their direction.

Dr. Fayrer asked whether there was more than one species of elephants known in India, and whether any differences in the lamellæ of the molar teeth, such as were characteristic of the African elephant, had been observed.

Dr. Stoliczka said that so far as present observations went, Indian elephants have all been referred to one species, and pointed out the great difficulty which existed in making accurate observations on the teeth, after they had been much ground down by use. While the arrangement of the lamellæ will of course remain constant, variations may arise from different causes. Observations on the milk-teeth, would be much simpler and more to be depended upon. Several important distinctions have been traced out among fossil elephants by the study of these milk-teeth.

The President thought the Society would join him in thanking Lieutenant Johnstone for his brief and modest, but very suggestive notes. There were many, very many, points of interest, which few could have such opportunities of settling as Lieutenant Johnstone. The very question of the number of ribs in the Indian elephant had been open to discussion, and there were many other points of the highest interest which, he doubted not, the writer of these notes would now bear more fully in mind.

Lieutenant Johnstone would be very happy to aid to the best of his ability in carrying out any investigations concerning elephants. He would beg to suggest that some competent person would take up a question of very high importance,—he alluded to the diseases of elephants. He himself knew very little about it, while the oldest and best máhúts appeared to know even less. They were possessed of a number of empirical remedies handed down for generations, but many of which were grossly absurd. The roasted head of a dog was, for instance, considered specific in some cases. There were several attacks quite fatal to these animals, which, if properly studied, he felt convinced, could be brought under control.

In reply to a question from Mr. Atkinson, he said he never had met with a white elephant. Elephants frequently became partially light-coloured, or what was called white; he had seen one himself in Assam, which was quite piebald. This change of colour was brought on, he believed, by attacks of a kind of fever. Wild elephants never were so prettily varied in colour in this way about the trunk as those in captivity.

The President announced at the request of Colonel H. Yule, R. E. that he was engaged in the preparation of a commentary on Marco Polo; and would feel very grateful to any member who would favour him with notices tending to illustrate the localities visited by Marco Polo, or the subjects noticed by him.

Mr. Waldie gave notice that he would, at the next meeting, move the following alteration in Rule 51 of the Bye-laws.

That "the general meeting of December," be substituted for "the day of election," and that the following be inserted at the end of

the Rule: "These balloting lists shall be laid before the members at the December meeting."

LIBRARY.

The following additions were made to the Library since the meeting held in April last.

Presentations.

**** Names of Donors in Capitals.*

List of Bengali and Sanscrit books and pamphlets &c. published at Native Presses in Calcutta in 1865.—THE REV. J. LONG. .

Popular Bengali Proverbs by the Rev. J. Long.—THE AUTHOR.

Russian Proverbs illustrative of Social condition of Peasants and Women in Russia.—THE REV. J. LONG.

The Prevalence of Organic Disease of the Spleen as a test for detecting malarious localities in hot climates, being a report of a Committee assembled by General Order of the Commander-in-Chief, dated the 16th September, 1854.—THE GOVERNMENT OF INDIA, FOREIGN DEPARTMENT.

Selections from the Records of the Government of India, Foreign Department, Nos. LVIII and LIX.—THE GOVERNMENT OF INDIA, FOREIGN DEPARTMENT.

Geological Report on Londonderry and Parts of Tyrone and Fermanagh by Capt. J. E. Portlock, R. E., F. R. S., F. G. S.—THE ROYAL SCHOOL OF MINES.

Memoirs of the Geological Survey of India, Palæontologia Indica, Vol. V. part 5.—THE GEOLOGICAL SURVEY OF INDIA.

Vocabulary of Dialects spoken by Aboriginal Natives of Australia.—J. S. CARLILE, Esq. MELBOURNE.

Statistiques des Mines et des Mineraux, par R. Brough Smyth.—J. S. CARLILE, Esq. MELBOURNE.

A memorial of the Victorian Exhibition 1866, consisting of a verse from the Holy Writ in above one hundred languages.—J. S. CARLILE, Esq. MELBOURNE.

Bulletin de la Société de Géographié, January 1868.—THE GEOGRAPHICAL SOCIETY OF PARIS.

Report on Cattle diseases, by K. McLeod, Esq.—THE GOVERNMENT OF BENGAL.

Catalogue of Pathological preparations in the Museum of the Medical College, by Dr. J. Ewart.—THE AUTHOR.

The Rock-cut Temples of Ajanta, by J. Burgess, Esq.—THE AUTHOR.

Hyāti Afgháni, by Hyát Khán.—THE GOVERNMENT OF PANJAB.

Les Squelettes de Cétacés et les Musées qui les renferment.—THE AUTHOR.

Proceedings of the Royal Geographical Society, Vol. XII, No. 1.—THE ROYAL GEOGRAPHICAL SOCIETY.

Proceedings of the Royal Society, No. 98.—THE ROYAL SOCIETY.

Sitzungsberichte der Königl.-bayer. Akademie der Wissenschaften zu München; Jahrgang, 1867. Band I.—K. A. DER WISSENSCHAFTEN ZU MÜNCHEN.

Chart of the World, by H. Berghaus und F. v. Stülpnagel.—THE AUTHORS.

The Calcutta Journal of Medicine No. 3.—THE EDITOR.

Purchase.

Revue des Deux Mondes, 1st February to 1st March, 1868.

Jacut's Geographisches Wörterbuch aus den handschriften zu Berlin, St. Petersburg, Paris, London und Oxford auf Kosten der Deutschen Morgenländischen Gesellschaft, herausgegeben von Ferdinand Wüstenfeld. Zweiter band, Bog. 1—121.

The Indian Medical Gazette, Vol. III. No. 4.

Revue et Magasin de Zoologie, 1868, No. 1.

Revue Archéologique, 1868, No. 2.

Revue de Linguistique, Tome I. fasc. 2.

The Annals and Magazine of Natural History, 1868, Nos. 2, 3.

The Ibis, 1868, No. 1.

The Numismatic Chronicle, 1867, part 4.

Journal des Savants, 1868, Jan., Févr.

Reeve's Conchologia Iconica, parts 268, 269.

Comptes Rendus, 1868, 1 to 7.

Gould's Birds of Australia, Supplement, Part IV.

Pratna-Kamra-Nandiní, No. 8, 1868.

Fauche's Mahábhárata, Vol. VIII.

Wörterbuch der Indogermanischen Grundsprache in ihrem Bestande vor der Völkertrennung. Ein Sprachgeschichtlicher Versuch von F. C. August Fick.

Nilsson on the Stone Age.

Beitraege zur Baktrischen Lexikographie von Paul de Lagarde.

Darwin's *Animals and Plants under Domestication*, 2 Vols.

Falconer's *Palæontological Memoirs*, Vols. 1, 2.

Aubaret's *Grammaire Annamite*.

Vullers' *Supplementum Lexici Persico-Latini*.

Gorresio's *Uttarakānda*.

Schlegel and Pollen's *Recherches sur la Faune de Madagascar*.
2e Livr.

The American Journal of Science and Arts, Nos. 127 to 133.

Beddome's *Ferns of British India*, part XIX.

Exchange.

The Athenæum, January, 1868.



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR JUNE, 1868.

Pursuant to notice from the Council, a Special General Meeting of the Society was held on Wednesday the 3rd of June, 1868, at 9 o'clock, P. M.

The President in the chair.

The Chairman explained the reasons for which the special Meeting had been convened, and reported on the part of the Council that circulars for collecting votes for the alteration of Bye Laws Nos. 13, 43 and 64, had been sent to 119 non-resident members and 56 replies have been received. Of these one votes against the change in Rule 43, one votes against the change in rule 64; and one declines to vote, not having a copy of the Bye Laws.—The rest are all in favour of the changes proposed.

As the several propositions had already been discussed in the Society, and were only now brought forward for confirmation or rejection, according to the result of the voting of the non-resident members, he would read the proposals seriatim, and put them separately.

The first was—That in Rule 13 the words, "nor shall his name be entered on the member roll" be inserted after the "words entitled to vote."

This was put to the meeting and carried, more than three-fourths of the votes taken being in favour of the alteration.

Secondly.—That the following words be added at the end of Rule 43, "two months from the date of issuing the voting papers being allowed for that purpose."

This was put to the meeting and carried.

Thirdly.—That the following words be added at the end of Rule 64—" But no case which involves a change of the rules of the Society, shall be declared urgent under this rule."

This was also declared to be carried.

The Special Meeting was then dissolved.

A Monthly General Meeting of the Society, was then held.

The President, in the chair.

The Minutes of the Special Meeting of the 6th May, 1868, were then read,—when it was proposed by Mr. H. F. Blanford and seconded by Mr. H. Locke, " That the Minutes of the Special Meeting of the 6th May, being incorrect in many particulars, be referred to the Council for revision and correction, and re-submission to the Society."

A show of hands being called for, this motion was declared lost. Mr. Blanford then demanded a scrutiny and this being held, the motion was again declared to be lost.

It was then proposed by C. D. Field, Esq., and seconded by Colonel J. E. Gastrell, " That in accordance with the spirit of Rule 60, any inaccuracy of which the present meeting are satisfied, be now corrected."

This was put to the Meeting and carried.

The President then read the Minutes again in detail, when the following corrections were agreed to,

Page 123, line 12,* insert the words, 'Senior Vice-President' after the Hon'ble J. B. Phear.

Page 124, line 9,—omit the paragraph commencing, 'A question' and terminating with, 'to be seconded.'

Page 125, line 17, substitute Mr. Scott, for Dr. Waldie.

„ 25, *for*, This was seconded by Dr. Colles, and was put to the meeting, *read*—This was put to the meeting.

„ 27, omit the words, "in consequence of this resolution."

These alterations having been agreed to seriatim, the minutes were then confirmed, with these corrections.

The minutes of the last Ordinary General Meeting were then read and confirmed,

* These numbers refer to the printed copy of the Proceedings already circulated to the members.

I. The following presentations were announced :—

1. From the Commissioner of the Central Provinces,

Two Copies of Report of the Ethnological Committee on papers laid before them and upon examination of specimens of Aboriginal tribes brought to the Jubbulpore Exhibition of 1866-67.

2. From Dr. F. Steindachner through Dr. F. Stoliczka, a copy of "Ichthyologischer Bericht über eine nach Spanien und Portugal unternommene Reise."

3. From Colonel W. H. Sykes, a copy of Analysis of the Report upon the state of the Empire of France presented to the Senate and Legislative body, February, 1867.

4. From Major J. F. Tennant, a copy of a Memorandum on preparations for observing the Total Eclipse of the Sun on August 18th, 1868.

II. The following gentlemen duly proposed and seconded at the last meeting were ballotted for and elected as ordinary members :—

E. Buck, Esq., C. S., Cawnpore.

Bábu Yatíndramohana Thákura.

H. Reinhold, Esq.

Dr. C. R. Francis (re-election.)

III. The following are candidates for ballot at the July meeting :—

Dr. G. W. Leitner, proposed by Mr. Grote and seconded by Mr. Blanford.

Lieutenant C. F. T. Marshall, Lahore, proposed by Mr. Grote and seconded by Bábu Rájendralála Mitra.

W. Smith, Esq., C. E., proposed by Dr. T. Oldham and seconded by Mr. H. Leonard.

R. H. Renny, Esq., Assistant Commissioner, Chittagong Hill Tracts, proposed by Captain T. H. Lewin, seconded by Babu R. Mitra.

The Rev. James Roberts, Jr. Chaplain of the Church of Scotland, proposed by Mr. Sime, seconded by Mr. H. F. Blanford.

IV. Letters from the following, intimating their desire to withdraw from the Society, were recorded :—

Captain F. S. Staunton, R. E.

J. H. Branson, Esq.

A. P. Macdonell, Esq.

V. Mr. D. Waldie, brought forward the following motion, notice of which was given at the last meeting :—

“ That Rule 51 be made to read as follows :—The Council for the time being shall before the *General Meeting of December*, cause to be prepared a sufficient number of printed balloting lists, according to the form in the appendix, which shall contain the names of those persons whom they recommend to be appointed members of Council and office-bearers for the year ensuing, with blank columns in which to place other names. These balloting lists *shall be laid before the members at the December Meeting.*”

Mr. Waldie said—The change consisted, as would readily be seen, in simply providing that the balloting lists should be laid before the members at the monthly meeting in December preceding the annual meeting in January, instead of on the evening of election itself. The apparent object of the rules was that the Council should recommend who should constitute the Council and Office-bearers for the ensuing year, but that the Society at their meeting should elect whom they thought fit, and all that was proposed was that the means should be adapted to carrying this into effect. He (Mr. W.) did not think that the means hitherto employed, so far as he had seen, were adapted to secure this. The Society had no previous knowledge of the names of those who were to be proposed for the new Council; these were submitted to the members at the meeting with, no doubt, the power to alter them, but they had no opportunity of exchanging opinions as to any desirable alteration; and though occasional alterations were made, from the absence of any power of consultation or combination there was the smallest probable chance of any of them being effectual, and as a matter of fact practically the old Council elected the new one. So far as he was himself concerned, he had hitherto felt not the slightest objection to it, as on all occasions he had approved of the lists in their entirety, but he could easily conceive that he might on some future occasion wish to insert some name or names that were not in the Council's list, and probably other members might wish the same: indeed, the alterations occasionally made shewed that such was the case. Beside, it ought to be remembered that silence was not always satisfaction: not very long ago a member had expressed dissatisfaction with the small attention pai

to the opinion of the mofussil members, and an alteration had been made in the rules in consequence.

If the proposal was adopted, it would be necessary to alter Law 85, so as to be in accordance with it. It might also be worthy of consideration whether Law 47 might not be modified.

Mr. W. farther observed that, though not much acquainted with the working of such Societies, he knew of at least one scientific Society in London which sent the balloting lists by post to their country members. If such a change as this was contemplated, some other rules might require attention, such as 32 and 33. But he merely threw out this as a suggestion for the consideration of the Council.

The motion was referred to the Council for report.

VI. The Council reported that on a recommendation of the Finance and the Philological Committees, they have allotted Rs. 3,000 to the publication of an English Translation of the *Ain-i-Akbari*, by Mr. Blochmann, in the *Bibliotheca Indica*.

Also, that they have elected F. Stoliczka, Esq., Ph. D. a member of their body and Natural History Secretary in place of Dr. J. A. P. Colles, who has resigned both his seat in the Council and his Nat. Hist. Secretary-ship, as he is leaving Calcutta; subject to the confirmation of the Society at the monthly meeting of July.

Also, that they have agreed to receive and take charge of the instruments formerly used by Col. Lambton in the early operations of the Great Trigonometrical Survey, proposed by the Officiating Surveyor General to be deposited in the Society's rooms.

The President brought to the notice of the Society that H. F. Blanford, Esq., having resigned his Secretary-ship of the Society at the last Special General Meeting, he had requested Babu Rájendralála Mitra to carry on the current duties, for the present.

VII. The President then explained to the Meeting that subsequently to the meeting of the Council, Maulavi Abdul Latif Khan Bahadur had called on him, and explained to him that there were at present in Calcutta for a short time several of the Mussulman inhabitants of Yunan, the Panthays; that one of these appeared a man of some learning from whom he had obtained a brief history of the race in Arabic, which he had translated, and which he was very desirous of laying before the Society, while these Panthay gentlemen were here

and could attend, and afford any further information that might be sought. As these gentlemen could not be present at the next Ordinary Meeting, he had, as authorized by the rules of the Society, added the Maulavi's paper to the list for this evening, but as they had already been sitting for some time, he would ask the meeting to allow this paper to be read before the others.

This was agreed to.

Maulavi Abdul Latif then read "*Notes on an Arabic history of the PANTHAYS, with translation,*" as follows.

From the earliest times China has excited the keenest curiosity of the outer world. Its undoubted antiquity, its wealth, the vastness of its population, its arts and civilization, its social peculiarities, above all its jealousy of the stranger, attracted to it travellers from the most distant countries; and the accounts which they published, meagre and unsatisfactory as they necessarily were, were still of a character to keep up the interest in the strange land. The events of late years, and the anticipations of a no distant future, have given our interest in Western and Central Asia, a more direct and even personal character. Our knowledge, however, of the regions has not proportionately increased. It is fortunate that the ardour of our scientific men, our desire to find new outlets for commerce, and our increased political circumspection, are at work to supply the want. We have recently sent an expedition with commercial and scientific objects to explore the overland route to China, and are anxiously awaiting the issue. Not long ago, the world was startled by the chance intelligence that there was a numerous Mahomedan population living for centuries in China, and that for some reason or other, they had thrown off the Chinese yoke. Great curiosity was awakened by the information, but beyond the half authenticated original rumour, there were no adequate means of satisfying this curiosity.

Colonel A. Fytche, the Chief Commissioner of British Burmah, who gave, at our December meeting, almost the first account of these interesting China Mussulmans, dwelt much on the extreme difficulty of obtaining any information regarding them, and gave abundant warning for receiving his account with considerable allowances. Happily, a few months after, arrived at Calcutta, by way of Burmah, on their way to Mecca, a dozen pilgrims from among these China

Mahomedans. Some information of their country, more especially in regard to routes, obtained after much difficulty of communication with them, has already been published in the 'Daily News' paper of the 25th ultimo. I am happy to be able to add some more to the stock, and to introduce a couple of our distant and interesting visitors to this meeting, for ocular observation and personal enquiry as to any facts. From what I could learn, Arabic learning, as befits a Mahomedan country, flourishes well in Mussulman China, much encouragement being given to its cultivation, by means of numerous colleges, and by rewards to learned men for studying the mass of Arabic literature, which has found its way there.

One of our visitors, named *Syud Abdool Wudood*, appears to be a learned man, and as he is not at all disinclined to impart information, his presence in Calcutta, would have been really valuable, had it not been for his almost unintelligible pronunciation of Arabic. He writes, however, Arabic fluently and well, and he has in his possession an account in Arabic of the Mahomedans in China, giving a brief narrative of the political events that have taken place in Yunnan during the last thirteen years. It is not such an account as will satisfy all the demands of European enquiry, but for an oriental document, it is singularly clear. What gaps there are may be filled up by fresh questioning. I have made a copy of the account, which I beg to present to the Society, and I will now read a translation of it.

'In the year 1254 Hegira (1839 of the Christian era) a disturbance took place in a district of the Province of Yunnan; the particulars of which are, that the Infidels burnt down several villages of the Mahomedans to ashes and massacred their inhabitants, killing Mahomedans, men and women, to the number of 2000 or more. The survivors preferred their complaints before the higher local authorities, but no one paid even the slightest attention to them, and on the contrary they charged these very persons with being blameable and guilty. They then repaired to Peking, and laid their grievances before His Majesty the Emperor of China—who deputed one of the higher Officers of the Court to Yunnan, in order to do justice. When this Officer arrived there, he perverted the royal commands, and proceeded to act just as he was instructed by his prede-

cessors,—insomuch that he compelled the Mahomedans to sell off their lands, houses and cultivations, to the Infidels at low prices. After this, the oppression of the Infidels towards the Mahomedans by word and deed increased considerably, and in some districts the old animosity gradually revived and quarrels arose. When the Infidels had the better of the Mahomedans in the fight, the authorities became dumb and blind; but when the Mahomedans defeated the Infidels, the Officials espoused the cause of the Infidels. For some years, matters continued thus.'

'In 1271 Hegira (1854 of the Christian era) a hard struggle ensued throughout Yunnan. It arose thus:—The Infidel Officials gave secret orders to all their co-religionists to combine, and on a certain appointed day, to put all the Mahomedans to the sword; the reason for secrecy being, that the Mahomedans might not be warned to combine in self-defence. The infidels made their party strong and firm; and concocted schemes of fraud and treachery, and signs of evil began to manifest themselves. When we Mahomedans saw such a state of things, and compared our numerical weakness with the vast number of the Infidels, we were overwhelmed with grief and anxiety. We regarded the fact, as a plague without remedy, a danger from which there was no escape; and we thought that there was no refuge but in God, and that we had no means left, save to implore the mercy of God, and pray for aid from Him. We then recited the holy text: "O God! Thou art our Lord, grant us victory over the nation of infidels."'

'Some of the Infidels prematurely betrayed their plot by their eagerness, for without waiting for the appointed day, they began in some of the districts, to raise discord and contention. The Mahomedans of those parts of the Province sought help from their brethren of the entire Province. They all united together and assisted one another. We, the followers of Islam, moved in large bodies from one place to another, and commenced patiently attacking the Infidels. We willingly placed ourselves in the most imminent dangers, repeating the holy sentence: "O God! give us all patience and firmness, and fix our feet, and help us to defeat this nation of infidels."'

'After all those distresses, God granted us victory and ease. We killed some of the Infidel officials in battle. Villagers fell without

number, mostly in battle, and others in the streets, while many were burnt and drowned. Such as escaped the wholesale massacre, leaving their families to their fate, fled to other places, and there settled themselves. Some of the Infidels of certain districts, finding their own party dispersed, and their string of union broken, were compelled to surrender, and made submission. We granted their prayer. Some of these refugees even followed us in battle and joined us in destroying the enemies. The remaining chiefs having collected a large number of Infidels from different districts and cities, managed their affairs and guarded the different posts as strongly as possible. After this many hard battles were fought between ourselves and the Infidels. The current of bloodshed was moving to and fro; and disturbances spread throughout the Province from east to west. The country near and far was ruined and destroyed. In some battles, we sustained manifest defeats and routs, and in others we were crowned with victory and delight. We captured immense booty, and lofty edifices came into our possession. Thus we alternately shared defeat and victory, until by the grace of God, and our numberless victories, we took possession of large cities and many palaces and buildings. And God made the Infidel inhabitants to be our subjects and dependents, all of them submitting to the decree of fate. At the instigation of the Officials, the enemies again raised tumults from their own houses. For instance, up to the present time, we go on warring with them, and peace has not yet been restored, and the fire of discord still burns.'

'As for our Province of Yunnan, it has been divided into two parts. The eastern Division is called *Ecdon*. Its capital city is *Sinchan*. Here the Mahomedans have for their chief, a man of the name of *Myan-foon*. Of the inhabitants of the last, some are Mahomedans and some Infidels; but the latter pay allegiance to the Mahomedans.'

'The other part of the Province lies on the west. Its name is *Isee*, and its capital city *Tali*. Here also the Mahomedans have elected a chief, whose name is *Soleiman Ibn-i-Abdoor Ruhman*, who has established Islamism, by building mosques and schools and colleges, and assisting and honouring learned men. The inhabitants of the west are mostly Mahomedans, and few Infidels, but they are dependents of the Mahomedans. He has appointed several Officers

in each city, one entrusted with ecclesiastical affairs, another in charge of the executive, and a third at the head of the army. It is very near when he may get or assume the title of Sultan.

'As for the chief of the east, *Myan-foon*, he was persuaded and tempted by the chiefs of the Infidels, with the promise held out to him, that in case he should separate himself from the Mahomedans and come over to their side, great honors would be conferred on him by their Emperor, and the whole Province of Yunnan would be given to him. The poor fellow was puffed up with vanity by their allurements; and what was the object of their advice, but to sow discord among the followers of Islam? A battle at last took place between *Myan-foon* and *Syud Soleiman Ibn-i-Abdoor Ruhman*; but through the mediation of one *Hajee Yoosuff*, a truce was concluded between them, by the division of the whole of the Province in two equal shares. After three years, at the instigation of the chiefs of the infidels, *Myan-foon* broke the truce and became neglectful of the rights of Islam. *Hajee Yoosuff* also was unable to prevent him from breaking his promise. Until at last *Myan-foon* collected a large army composed of the Mahomedans and Infidels, the number of which we do not know. *Syud Soleiman Ibn-i-Abdoor Ruhman* also brought to order his victorious army, and despatched them to be posted in all the passes for opposing the troops of *Myan-foon*. When the two armies met, God gave us (the followers of *Syud Soleiman Ibn-i-Abdoor Ruhman*) victory over our enemies, and the troops of *Myan-foon* were totally routed in the following ten different places:

1, Nanshan; 2, Wowkhanahen; 3, Mafna Kawan; 4, Kham Nan; 5, Youghan; 6, Nahbeir; 7, Dayau; 8, Din Yoon; 9, Zur Dujlah; 10, Yoonbah.

'And we took the following towns from them also:—

1, Din Yoon; 2, Daya; 3, Loofon; 4, Maka; besides four saline wells, whose names are as follow:—1, White well; 2, Sky-colored well; 3, Black well; 4, Fortunate well. Still both parties are fighting with one another.

'Besides the above, in the Provinces of *Shans* and *Kansoo*, God has given victory to the Mahomedans over the Infidels; and the Mahomedans there have also taken forcibly all the cities. This piece of news is true; as a Mahomedan inhabitant of Yunnan, after remaining

for 13 years in *Shans*, has now returned home. Between our country (*Yunnan*) and *Shans*, the distance is that of 70 stages.

‘A large number of the Christians of France and England have come to China and to Peking, and to all the Provinces, and some of them have reached the Capital of the the Eastern Division of *Yunnan*. There they have erected churches and hung up therein the likenesses of Jesus Christ, the son of Mary. They have done likewise in many other Provinces too.’

Maulavi Abdul Lutf begged also to present to the Society a manuscript sheet written in Arabic by the said *Syud Abdool Wadood* of *Yunnan*, which he had the goodness to present to him. The archaic peculiarity of the caligraphy will, he believed, be remarked.

Several members having made different enquiries regarding the Panthay country from the Panthay gentlemen who were present, by the aid of Maulavi Abdul Latif; thanks were passed to the Maulavi for this interesting account.

Mr. Blanford said that the Society would doubtless be interested to know that information had that day been received from Dr. John Anderson on the Yunan expedition. The expedition had met with many obstructions to its progress, and had consequently experienced much delay, but at the date of Dr. Anderson’s letter (28th April) all serious obstacles appeared to have been overcome, and the Panthays, who appeared to be most anxious to receive the expedition, had just cleared away one of a formidable character by defeating and driving away from Mawpoo the Chinese robber chief Leeseetai who is stated to have commanded a body of 5000 men, and to have been instigated by certain of the Chinese to destroy the expeditionary party. The road was therefore open to Momein, and the Panthays have sent circular notices to the chiefs on the road to give the expedition every assistance in their power. Dr. Anderson’s letter had been brought by Captain Williams and Mr. Stewart who had returned to Mandalay. Dr. Anderson expected to be back in Calcutta about August.

The following papers, reading of which was postponed at the last Meeting, were read by the President:—

Notes on the Crosses and Cromlechs of Chindwara District, by J. Mulheran, Esq., in a letter to Col. J. T. Walker, R. E.

Report by the Commissioner of Coorg on the Cromlechs of that Province.

Mr. Mulheran writes,—I have just received your letter of the 17th ultimo, and hasten to mention that Colonel Thuillier wrote to me upon the same subject, and that I at once replied to his letter and forwarded the photographs referred to by Mr. Bayley. I also furnished such information as it was in my power to afford, but avoided the question raised at home by Mr. Marcus Keane, M. R. I. A., regarding the whole of these ancient remains, *crosses included*, being Bhuddist in origin. As regards the Cromlechs themselves, I believe Mr. Keane to be perfectly correct, the majority of the massive stone temples and other ancient structures found within a radius of 200 miles of the crosses, being similar to the Bhuddist Thakurdwaras of the snowy range, as regards the extreme grossness of the subjects represented. As regards the crosses being also Bhuddist in origin, Mr. Keane must be mistaken, as no instance can be cited either in India or at home, or indeed in any part of the world of a memorial cross ever having been erected, except as a symbol of the Christian faith. Apart from this, the whole of the Katapur crosses, as you will see from the enclosed photographs, are of the Latin form.*

As regards the people by whom these crosses were erected, the question is one of great difficulty, the people, living in the vicinity, being utterly ignorant of the symbol itself, and incapable of affording even traditionary information. From what I have myself seen of the neighbourhood of Katapur and the open glades in the forest to the west, I have not the slightest doubt that, at some former period, the whole of these cleared portions of the forest were extensively cultivated by Teligus, or some other race far more civilized than the present race of Gonds. Indeed, the large tank a few miles west of Katapur, which irrigates extensive fields of rice, is one proof of this, as are also other large tanks east, west, and north of Katapur, the skill and labour evinced in which would do credit to Engineers of the present day. If, therefore, it can be shown that there are reasons for believing that a considerable portion of the country now overrun with forest, was formerly cultivated by a race differing from the Gonds, and that the massive stone temples in all stages of decay were erected by them, there

* See Proc. April, 1868, p. 116.

will be little difficulty in giving the same people credit for the ability that was required to quarry stones 15 tons in weight, and to place them in their present position.

If the Cromlechs could be shown to be in any way connected with the Himarpanti temples in their neighbourhood, the question of origin might be readily settled. That the Bhuddists are exceedingly particular in preserving memorials of their dead, will be admitted by all who have seen the extraordinary number of slabs collected in some of the valleys of the snowy range, and the care evinced in covering each of these slabs with characters expressive of the virtues and hopes of the departed. Occasionally these collections of stone memorials are 120 feet and upwards in length, $6\frac{1}{2}$ broad, and from $4\frac{1}{2}$ to 5 feet in height, or nearly 4,000 cubic feet in extent. In the slabs so collected—and I examined a great number—I did not find a single one upon which the characters cut were not clearly traceable. Several were 2 feet in superficial area, and entirely covered with writing. The people assured me that the whole of these piles of slabs consisted of written memorials of the dead, and that they were brought from all parts of the country. In none of the Cromlechs that I have seen, have I been able to discover traces of any writing, however faint. What, however, struck me as peculiar both in the Cromlechs of the Godavery, and in the collections of the snowy range, was the extraordinary care taken by the people in massing these memorials in particular places.

The stone temples south, west, and north of the Cromlechs at Hyderabad and on the ridges adjoining the Godavery, are unmistakeably Bhuddist, as are also the Ellora and Adjanta Caves. The enclosed* photographs of the great-Dragon of the modern Jain temple at Karinjah, is similar in form to those noticeable in the caves and Himarpanti temples of the Nizam's country. The peculiar feature in all is the eye, which is represented as capable of *elongation*. I may add that I have seen paintings on silk (native offerings for temples) brought from Llasa in several of which I noticed the same Dragon, but with longer horns. The Bhuddist figures, with the palms resting upon the turned-up soles of the feet, are unmistakeable and are sufficient in the absence of all other signs to indicate the source of most of the old stone structures

* (Not enclosed, nor yet received; J. T. W.)

scattered over the Nizam's country. I have, therefore, no hesitation in expressing my belief that the whole of these temples are Bhuddist in origin, although some have been converted into mosques, and others into Hindoo temples. The one converted into a mosque at Dowlatabad, has a large black slab covered with characters in *Pelvi*, in excellent preservation, buried in the wall which, if translated, would, no doubt, throw some light upon a subject that at present is doubtful.

I enclose a few photographs to afford an idea of some of the stone temples to which I refer. Also photographs of the ruins of two monasteries near Súnár and Maiker. A larger camera, with good definition, would have given a clearer idea of these massive structures, as well as of the peculiarities of the carvings in stone of the principal figures.

As regards the crosses found at Katapur, there can be no doubt that they are more puzzling than the Cromlechs themselves. In noticing them, however, I may observe that, as the Godavery below Badrachulam has always been navigable at certain seasons of the year for boats of a particular size, there has always been some communication with the sea coast. If, therefore, there be any foundation for the belief that St. Thomas visited the Mount at Madras, it is reasonable to infer that either that apostle or some of his disciples visited the sea coast near Cocanada, and made converts to the Christian faith, either at that place or higher up the Godavery. If this could be shewn to be true, no difficulty would be experienced in explaining the origin of the crosses, however strangely situated, it being impossible to believe that heathens would now think of erecting massive stone crosses of the Latin form either as memorials of the dead, or of their own faith. That the converts, if any, were few in number and confined to one locality, may be inferred from the fact that although Cromlechs are found in great abundance on the ridges adjoining the Godavery, as well as upon the undulating land near Hydrabad, crosses of the form to which I have referred, are only found at Katapur and Malín, a few miles west of the Godavery. My own belief is that, if the crosses are not memorials of the faith of Bhuddist converts, they are memorials of the faith of Christian labourers of the early ages of Christianity, or of the Roman Catholic Church at Goa, who died during their ministration on the banks of the Godavery.

The crosses, as you will see from the photographs enclosed,* are all of one piece of stone, and from 10 to 11 feet in length, and indicate as clearly as such laborious memorials can indicate, the strong faith of those who erected them.

The above, added to the remarks made in my letter to Col. Thuillier, embrace all the information it occurs to me to afford regarding the subject to which you refer. Should either you, however, or Mr. Bayley, consider more detailed information upon any particular question desirable, I will gladly furnish the same on hearing from you.

8th March, 1868.

Col. Walker in his note, says :— * * *

The fact that the crosses are only to be met with in one locality, while the Cromlechs are found in great abundance in several parts of the Hyderabad districts, as well as in other parts of India, *e. g.* Chunar, would seem to be fatal to the hypothesis that the crosses and Cromlechs 'belonged to the same people.' The proximity of the Cromlechs to the sites of extensive Bhuddist ruins, and their similarity to the Bhuddist Thakurdwaras of the snowy range, makes it probable that they are of Bhuddist origin. But the crosses may well be the relics of a small community of Christian converts and missionaries, whose annals have not been inscribed on any page of history; this is much more probable than that they can be of Bhuddist origin.

As for the hypothesis that the Cromlechs are the work of 'a stone implement using race,' I confess to feeling very doubtful as to whether such implements could have sufficed for the construction of such works. * * * *Dehra Doon, 30th March, 1868.*

On the Cromlechs in Coorg. Sir R. Temple, Foreign Secretary to Government of India under date 9th April, forwards this correspondence by direction of His Excellency the Governor-General in Council, accompanied by three drawings and some lithographs of the remains. The letter from the Superintendent of Coorg, Capt. R. A. Cole, dated Merkara, 10th March 1868, says.

I have the honor to report the discovery of a large number of

* See Plate 1, fig. 1, p. 116.

Cromlechs or Cairns on some *bané* or grass lands about a mile to the west of the town of Veerajpett in South Coorg. The discovery was made by my Assistant, Lieutenant J. S. F. Mackenzie, in January last, in the following manner :—A quantity of stones was required for certain bridges and other works in Veerajenderpett, and one of the native merchants offered to get the stones if Mr. Mackenzie would allow him to remove them from the *bané* in question. Mr. Mackenzie inspected the locality and found the remains of a great number of Cromlechs, the stones of which had evidently been split up and removed at different periods by the Wuddars, a tribe of stone-hewers. The *bané* in question is much grown over with low brush wood; and on pushing further on, Mr. Mackenzie hit upon a fine large double Cromlech. On communicating this most interesting archæological discovery to me, I at once forbade the removal of any more stones from the locality, and directed the shrubwood and earth around the Cromlech to be removed, so as to lay bare the whole structure to its base.

Lieutenant W. Freeth, the Assistant Superintendent of the Revenue Survey, then kindly undertook to make drawings and plans of this double Cromlech and of two others, and I have now the pleasure of forwarding, for submission to His Excellency the Viceroy and Governor-General of India, three colored drawings* of these Cromlechs, as also 20 copies of plans of the same lithographed at the Merkara Sudder Jail Press from drawings by Mr. Freeth.

The double Cromlech, (Plate 2,) is formed by six large (unhewn) stones, surmounted by one large flat stone, 13 feet long, by 9 feet 9 inches broad, and about 7 or 8 inches thick. This top stone had been apparently not long ago chiselled and split open right across the centre from each side, so as to form four blocks, but most fortunately had not been removed, except a small piece at the back and to the left, looking at the Cromlechs. The back is also formed by one large slab, as also each side. The front slabs are smaller and divided by the large centre slab, which forms the enclosure into two compartments. These front stones have each a peculiar aperture of an irregular segmental form, about 1 foot 11 inches by 1 foot 8 inches, at the top and immediately below the superincumbent stone. The stones at these apertures are sharp on the inside, and present a bevilled appearance

* We have given a reduced copy of the most important of these. Ed.



CROMLECH NEAR VIRAJENDERPETT
COORG.

Photoincographed at the Surveyor General's Office, Calcutta.
June 1863.



outside. The inner rim is so sharp as to lead to the conclusion that these apertures could not have been used for ingress and egress. The centre stone projects to the front 2 feet 8 inches, and the top flag projects over the left compartment to such an extent as to afford shelter like a verandah. This was doubtless accidental, but it is a curious fact that this shelter is so afforded on the side, away from exposure to the monsoons which now prevail. The interior measurements of the compartments are also given in the plans by which it will be seen that each compartment was about 7 feet long, 3 feet 9 inches broad, and 4 feet high. Each compartment was flagged by a large stone in each. These compartments were nearly full of earth, but nothing was found in them. Dr. Shortt of Madras, who has opened many cairns on the Nilgiris and other parts of the Madras Presidency, informed me that he had never seen or heard of a double Cromlech of this description. This would add to the value of the present discovery.

There is also a single Cromlech similarly constructed of large unhewn and uncemented slabs of granite. It is 6 feet 8 inches long, by $4\frac{1}{2}$ feet broad, and 4 feet high, interior measurement. The top stone had been broken and partly removed, and the stem of a very old tree was found growing out of it; nothing was found in this either.

A third one is a still smaller Cromlech found on another *bané* about $1\frac{1}{2}$ mile from the others. On this *bané* are to be found many large tumuli, which apparently contain many of these Cromlechs. The front stone of this small Cromlech was just visible at the end of one of these tumuli, and I caused the earth above and around it to be cleared away, and the top stone was raised and made to slip over on one side. It was full of earth in which we found pieces of earthen pots and small pieces of charcoal.

At the end of another tumulus, another Cromlech was dug out, but we found the top stone had been removed, apparently very many years ago. In this also were found fragments of earthen vessels and pieces of charcoal, and also a small piece of a bangle. This bangle is much thicker than those in use in the present day, and the devices on it are in pale yellow and somewhat similar in form to those generally to be found on the modern imitation Etruscan vases, goglets, &c. I showed this bangle to all the native merchants at Veerajpett, who

declared that they had never seen one of such a description before. This bangle and fragments of earthen vessels were sent in to the Commissioner, and are now in the museum at Bangalore, but I would beg to suggest that they should be sent on to the Government with this report. The bangle is evidently of no modern date; but as the top stone of this Cromlech had been removed, and Wuddars had evidently been at work in the locality during the past 50 to 100 years, it is possible that the bangle had once belonged to some dusky beauty of that tribe. It was found also only about a foot and a half below the surface of the mound and just within the stone cist.

I have failed to discover any of those concentric rows of upright stones which have generally been found with such Cromlechs in cairns elsewhere, but the fact of the Wuddars having been so long at work in these localities would account for the disappearance of these stones which were probably first discovered and removed. It is worthy of note that these structures all face east and west. Very few of these Cromlechs would appear to have had the segmental apertures found in the double Cromlech, and in fact most of those now visible are much smaller and would appear to be more like those short stone cists containing cinerary urns, which have generally been found in the sepulchral mounds both in Asia and in Europe, and even in Central America. As remarked before by me, these *banés* abound with such tumuli, some of which have evidently not been touched. It is in such alone that we may expect to find still more interesting relics of this almost unknown past period of the history of the world and of our species, and I would earnestly request permission to push on these excavations. Some of these tumuli would appear to run parallel with each other, so that, when uncovered, these stone chambers would present the appearance of streets. The discovery of pieces of charcoal and fragments of apparently cinerary urns, would tend to show that the conclusions drawn by modern archaeologists were correct, *viz.* that these stone chambers were only used as sepulchral monuments. But my assistant, Mr. Mackenzie, has suggested that it is an extraordinary fact that, when such durable and lasting monuments to the dead are to be found, no remains of the dwellings of these ancient Dravidian races are visible in the same localities so as to throw still greater light on the ethnical records of the past. Is it possible that these larger

Cromlechs forming regular well-closed chambers, unlike those found elsewhere, were the dwellings, and the smaller stone cists and tumuli the sepulchral monuments of these almost hypothetical races?

In conclusion I beg to state that similar Cromlechs and monoliths are said to exist in Kiggutnad in South Coorg, and also near Fraserpett in East Coorg, on the borders of Mysore, regarding which I would propose to submit a separate report hereafter. Soliciting the Commissioner's sanction to an expenditure of 2 or 300 Rs. in making further excavations, I have &c.

The correspondence was closed by a letter from Sir R. Temple, Foreign Secretary to Government of India, to the Commissioner of Coorg, dated 9th April, stating :—

I am directed by the Governor-General in Council to acknowledge the receipt of your letter dated 11th ultimo, No. 59, with an enclosure from the Superintendent of Coorg, reporting the discovery by Lieutenant J. S. F. Mackenzie of a number of Cromlechs or sepulchral monuments in the vicinity of Veerajpett, in South Coorg, and forwarding three drawings executed by Lieutenant W. Freeth, of a large double Cromlech and two single ones of a smaller size, together with lithographed copies and plans.

2. His Excellency in Council desires that the thanks of the Government of India may be conveyed to Captain R. A. Cole and to the officers who have assisted him, for the interesting information contained in his letter to your address, and for the drawings which accompanied it.

3. The Governor-General in Council requests that the necessary measures may be taken for the conservation of these archaeological remains, and that memoirs may be prepared in accordance with the instructions laid down in the Circular of the 14th February last, issued by the Home Department.

4. As regards the proposal of Captain Cole to carry out further excavations, the Financial Department will be requested to place a sum of Rs. 300 at the disposal of that officer for the work in question.

The reading of the following was deferred till next Meeting :—

Letters from Mr. W. T. Blanford from Abyssinia.

On the Anatomy of *Sagartia Schilleriana* and *Membranipora Bengalensis*, by F. Stoliczka, Esq.

VIII. The receipt of the following communication was announced:—

1. Continuation of correspondence regarding the two Andamanese lads under the charge of Captain T. C. Anderson.

The meeting then adjourned.

LIBRARY.

The following additions were made to the Library since the meeting held in April last.

Presentations.

** * * Names of Donors in Capitals.*

Bulletin de la Société de Géographie, Février, Mars, 1868.—THE GEOGRAPHICAL SOCIETY OF PARIS.

Proceedings of the Royal Society of London, Vol. XVI. Nos. 99, 100.—THE SOCIETY.

Proceedings of the Royal Institution of Great Britain, Vol. V. P. 1, 2.—THE INSTITUTION.

Journal of the Statistical Society of London, Vol. XXX. P. 1.—THE SOCIETY.

Proceedings of the International Sanitary Conference, 1866.—THE GOVERNMENT OF BENGAL.

Mittheilungen der Kaiserlich-Königlichen Geographischen Gesellschaft, IX. Jahrgang 1865.—THE IMPERIAL GEOGRAPHICAL SOCIETY OF VIENNA.

Verhandlungen der Kaiserlich-Königlichen Geologischen Reichsanstalt, Jahrgang 1867, Nos. 1—18.—THE IMPERIAL GEOLOGICAL INSTITUTE, VIENNA.

Jahrbuch der Kaiserlich-Königlichen Geologischen Reichsanstalt 1867, Nos. 1-4.—THE IMPERIAL GEOLOGICAL INSTITUTE, VIENNA.

Die Fossilen Mollusken des Tertiär-Beckens von Wien, von Dr. M. Hörnes; Band II., Nos. 7, 8.—THE IMPERIAL GEOLOGICAL INSTITUTE, VIENNA.

Selections from the Records of the Government of the Punjab, Public Works Department, No. 1.—THE GOVERNMENT OF PUNJAB.

The Progress Report of Forest Administration in the Province of Oudh, 1866-67, by F. Read, Esq.—THE GOVERNMENT OF THE N. W. PROVINCES.

Sitzungsberichte der Königl. Bayer. Akademie der Wissenschaften zu München 1867, I Heft IV.—I HEFT II:—K. BAYER. AKADEMIE DER WISSENSCHAFTEN ZU MÜNCHEN.

Progress Report of Forest Administration of Mysore, 1866-67.—THE GOVERNMENT OF INDIA.

Progress Report of Forest Administration in British Burmah, 1866-67, by H. Leeds, Esq.—THE GOVERNMENT OF INDIA.

The Journal of the Chemical Society, for January, February and March, 1868.—THE SOCIETY.

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Nachträge zur Flora von Nieder-Oesterreich von Dr. A. Neilreich.—DITTO.

Contribuzione pella Fauna die Molluschi Dalmati per Spiridione Brussina.—DITTO.

Separatabdruck naturwissenschaftlicher Abhandlungen aus den Schriften des Zoologisch-botanischen Vereins in Wien.—DITTO.

Catalogus Systematicus Dipteriorum Europae, auctore R. J. Schiner, Dr.—DITTO.

Monographie der Oestriden von Friedrich Brauer.—DITTO.

Personen-Orts und Sach-Register der fünf ersten Jahrgänge (1851-1860) der Sitzungsberichte und Abhandlungen des Wiener zoologisch botanischen Vereines, zusammengestellt von A. Fr. Grafen Marschall.—DITTO.

Bericht über die österreichische literatur der Zoologie, Botanik und Paläontologie aus den Jahren 1850-1853.—DITTO.

Nachträge zu Maly's Enumeratio plantarum phanerogamicarum inferii austriaci universi von A. Neilreich.—DITTO.

Nouveau système des Blattaires par C. Brunner de Wattenwyl.—DITTO.

Purchases.

Reise der Oesterreichischen Fregatte Novara um die Erde in den Jahren 1857, 1858, 1859 unter den Befehlen des Commodore B. von Wüllerstorff-Urbair: Zoologischer Theil, Zweiter Band, *Ameliden*.

Comptes Rendus, Nos. 9, 10, 11 and 12.

Deutsches Wörterbuch von J. Grimm und W. Grimm, Band V. Lief 8.

Revue de Zoologie, No. 2, 1868.

The Annals and magazine of Natural History, No. 4, 1868.

Die Preussische Expedition nach Ost-Asien nach amtlichen Quellen, Botanischer Theil, *Die Tange*.

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Anecdota Syriaca. 2 Vols.

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The Quarterly Journal of Science, No. XVIII. April, 1868.

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Hewitson's Exotic Butterflies, P. 66, 1868.

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Journal des Savants, March 1868.

Revue Archéologique, Tome XVII., No. III.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR JULY, 1868.

A meeting of the Society was held on Wednesday, the 1st instant, at 9 o'clock p. m.

The President, in the chair.

The minutes of the last Ordinary General Meeting were read and confirmed.

Mr. Blanford wished to ask by what authority the last numbers of the Proceedings had been issued, and in reply the President observed, the proper course would be for Mr. Blanford to give notice of motion, when the time for such notices arrived.

The following presentations received since the last meeting were laid on the table :—

1. From the author, a copy of "The Alps and the Himálayas,—a Geological comparison;" by H. B. Medlicott, Esq.
2. From the Superintendent, Barrackpore Park, a specimen of a young tiger.
3. From the Rev. J. Long, a copy of "The Calcutta Gazette or Oriental Advertiser," for 1785, 1786, 1789 and 1790.

A copy of "Samáchára Darpana," 1824, Vol. VIII.

A copy of "Collection of 50 prints from the Antique gems in the collections of the Right Hon'ble Earl Percy, Hon'ble C. F. Greville and T. M. Slade, Esq."

A copy of "Calendar of Indian State Papers," Secret Series, Fort William, 1774-75, and four other pamphlets.

4. From Muhammad Hyát through Mr. A. Grote, a copy of "Hyát i Aigháni."

5. From C. A. Wilson, Esq., through Mr. A. Grote, a copy of the Annual Report and Transactions of the Adelaide Philosophical Society for the year ending 30th September, 1867.

6. From Dr. G. W. Leitner through Mr. A. Grote, a photograph, containing portraits of Dr. Leitner and several Káfars, Chilási, Ghilghiti and Bálti natives.

The following gentlemen, duly proposed and seconded at the last meeting, were balloted for and elected ordinary members :—

Dr. G. W. Leitner.

Lieut. C. H. F. Marshall.

W. Smith, Esq., C. E.

R. H. Renny, Esq.

The Rev. J. Roberts.

The following are candidates for ballot at the August meeting :—

H. E. Perkins, Esq., C. S., Hoshiyárpur, proposed by Dr. J. Fayrer, seconded by Bábu Rájendralála Mitra.

Pandita Chandramohana Gosvámí, proposed by Bábu Rájendralála Mitra, seconded by the President.

Captain J. W. Muir, Political Superintendent Sirohi, Rájputana, proposed by Dr. J. Ewart, seconded by Dr. F. Stoliczka.

R. T. Hobart, Esq., C. S., Bustee, proposed by V. Ball, Esq., seconded by M. H. Ormsby, Esq.

A letter from J. M. Scott, Esq., intimating his desire to withdraw from the Society was recorded.

The following report of the Council on Mr. Waldie's motion, referred to them, was read.

"That the Council have nominated a Sub-Committee to consider generally the revision of the Bye Laws of the Society by whom the subject of Mr. Waldie's motion will be discussed as well as others."

The Council reported that they have elected H. Leonard, Esq., a member of the Finance Committee in place of A. Mackenzie, Esq., who had resigned; and that they will summon a special meeting of the Society, to be held on the day of the Ordinary Meeting in September, for the purpose of making the formal transfer of charge of collection to the Trustees of the Indian Museum.

The President explained, that as the day of Ordinary Meeting in September would come very early in the month, it would be im-

practicable to have the proper circulars issued, so as to allow of the two months' interval from date of issue now required by the rules, and that the actual date of the Meeting would therefore be fixed by the Council.

The President reported that on a motion of the Hon'ble J. B. Phear, the Council have resolved to propose to the Society :

That the Society do record their recognition of the eminent services rendered by A. Grote, Esq., to the Society during the long period over which his connexion with the Society has extended.

The President in moving the above resolution remarked—

"It is with much pleasure I bring forward this motion from the Council. It is known to most persons here, although I believe we have no regular announcement of the fact, that Mr. Grote, who has long been connected with their Society, who has justly attained its highest honours, and has been one of its most hard working and devoted servants, will leave India, within a few days. It is to me a source of unalloyed pleasure that it should have fallen to my lot to be in the chair this evening, inasmuch as I have thus an opportunity which might not otherwise have occurred, of giving very briefly expression to my feelings, and specially, because it would be idle affectation to attempt to ignore what is well known to very many here, that on numerous questions, affecting the management of the Society, Mr. Grote's views, and my own, have frequently differed widely. In such differences of opinion, I see nothing to regret—on the contrary, I believe that the success of any Society like ours, must depend on the entire freedom of our discussions, and I might say, on the existence of a healthy and even decided 'opposition party.' In any climate, under any circumstances, but more especially under the peculiar conditions of our existence here, the inevitable result of the absence of some interest of this kind, is the induction of a state of lethargy, a kind of vegetable existence, which certainly does not, and certainly did not conduce to progress or success. And therefore I say, I have never regretted that there should have been opposition of view or difference of opinion. But I trust that on no occasion have I forgotten that an opponent is not necessarily an enemy. Our differences of opinion have been only as to the best methods of attaining the same end, the advancement of knowledge, and the improvement of this Society, as one of the great means for

that advancement. And here I would yield to none, in the heartiness with which I would desire to recognize the continuous, the active, the devoted services of Mr. Grote to this Society. There has always been present with him an earnest recollection of it, whenever the slightest opportunity occurred of promoting its welfare, or of extending its influence. And if on this ground alone, I believe the Society will feel called upon to receive with favour this motion of Council.

But in addition to this, those who have known Mr. Grote will agree with me in recognizing his hearty appreciation of the labour of others; his cordial sympathy with the difficulties and perplexities of enquirers in every direction; the solicitude with which he endeavoured to develop the treasures of Oriental learning, and the encouragement which he ever held out to the educated portion of our Indian brethren to affiliate their talents and energies to the common cause of promoting knowledge. And in all this, they will see additional claims on the Society, for the recognition of those services which you are now asked to record.

Mr. Grote's connection with this Society dates from 1849, he is of longer standing as a member than most others now resident in this country. And I know that I am only giving expression to the wishes of the Society at large, in saying that we trust he may still for many years enjoy health and rest in his native land. I feel confident the Society will accept this recommendation of the Council with an unanimous affirmative.

Mr. Blanford said,—A vote of thanks such as that just proposed, should not be allowed to pass as a mere formality; and although as a vote proposed by the Council, it was not necessary to second it, he would wish, as one who had for some years held an office in the Society as a colleague of Mr. Grote's, and for a portion of that time under Mr. Grote's presidency, to record his testimony to the unwearied devotion with which Mr. Grote had always applied himself to advance its interests. This application had extended over many years, and from a period long anterior to Mr. Blanford's personal connection with the Society, but it was of his own experience of Mr. Grote, as the leading member of the Society that he wished to speak. His interest in the labours of the Society had extended to every department, and to all he had devoted himself in a

manner that had caused him to be publicly regarded as its representative member. One characteristic of his presidency, and one which was certainly not of least importance, was the uniform courtesy with which he had so long and frequently presided at the Society's meetings. The President had referred to differences of opinion that had prevailed between Mr. Grote and himself, and there certainly had been stormy meetings, in past times, but on such occasions Mr. Grote's courteous demeanour in the chair to those who most strongly opposed him, tended in no small degree to preserve the Society from dissensions and to assuage excited feelings. He thought that this, not less than other features of Mr. Grote's presidency, should be recorded among his many claims to the grateful recognition of the Society, and he thought that they would long regret, the departure from India, of one to whom their Society owed so much.

The resolution was then passed unanimously.

Hon'ble J. B. Phear gave notice that at the next meeting of the Society, he would propose that the Society record a vote of thanks to Mr. Blanford who had lately resigned the General Secretaryship, for his services.

The election of Dr. F. Stoliczka as Natural History Secretary was confirmed.

The Oriental Secretary read the following extract from a letter from Kumára Chandranátha Ráya of Nátor, forwarding a facsimile and a sealing wax impression of an inscription found in Rájshahi.

"The present object of my writing you is to give cover to a small transcript of an inscription found at the base of a very old and peculiarly-formed stone idol found by myself in the midst of a jungle when out shooting near a village called *Hapania*, and to request that you will be so kind as to try to decipher it. The character looks very much like old Bengali, not unlike that of the Rajshaye stone of Mr. C. T. Metcalfe, but as I have no idea of the old Bengali character, I am unable to make out the head or tail of it. The inscription is very short indeed, and may possibly be the name of the worshipper, but the peculiar formation of the idol, gives some interest to it, as *Shiva* and *Parbutty* are never at the present time publicly worshipped in so *lascivious* a form as the idol represents."

The inscription is as follows :

७ दामयद्दीयमरू ॥

The Secretary stated that the character of the inscription was the 10th century Sanskrit, and its language, Newari. The words were ९ दामयद् दीय मरू which literally means "not even a dām," i. e. no price whatever was charged for the image on which the inscription is recorded, or, in other words, it was a free gift. It was probably dedicated by a Nepalese Hindu.

The Secretary then exhibited to the meeting a rare tetradrachma of Antimachus Theos. It was in beautiful preservation, and appeared from the execution of the head and the legends to be undoubtedly genuine. A figure of this type of coin was some time ago published in the "Numismatic Chronicle" Fig. 7, plate iv. Vol. II, N. S., and noticed in the Journal of the Royal Asiatic Society of Great Britain and Ireland, by Mr. E. Thomas, but as it was taken from a cast, a figure from an undoubted original will, it is believed, prove interesting to numismatologists. This is in preparation and will be given with a future number of the Proceedings. The coin has been purchased for the Society's cabinet for Rs. 100. It has on the obverse—

The head of the king facing the right, filleted, with the legend ΑΙΟΑΟΤ * * before the face, and ΣΩΤΗΡΟΣ behind it.

Reverse. Jupiter in the act of hurling the thunderbolt, with an Aegis on the left forearm, which is stretched forward. His left leg is advanced to the left, and near it is an eagle with a chaplet of flowers over it. *Legend*, ΒΑΣΙΛΕΥΟΝΤΟΣ ΑΝΤΙΜΑΧΟΥ ΘΕΟΥ. *Monogram* A. N.

The Secretary also exhibited a coin of Azelisas which had been placed at his disposal for the purpose by Mr. Grote. It was a silver didrachma with the ordinary obverse, but a perfectly new reverse. On the *obverse*, it has the king mounted on a horse facing the right.

Legend, ΒΑΣΙΛΕΩΣ ΒΑΣΙΛΕΩΝ ΜΕΓΑΛΟΥ ΑΖΙΑΙΣΟΥ. *Monogram*, α.

Reverse. Female figure to the front standing on a lotus; the left hand rests on the waist, and the right over the stomach, holding something; on each side is a lotus stalk rising as high as the waist and

bearing an expanded lotus, whereon stands an elephant with its trunk extended over the head of the central figure. Legend in Aryan character, much cut up. As far as legible it may be read *Maharajasa rajati rajasa m—*.

There are two marks like monograms by the stalks, the right one being like \wedge ; and the left γ .

The reverse of this coin is evidently founded on the type of the Azas' square coin with the trident obverse, (*Ariana Antiqua*, plate vii. fig. 5, p. 327), which has a female figure standing amidst twining creepers; but the elephants are new, and shew the thorough Buddhist character of the coin.

The Secretary then laid on the table a MS. of the poems of Chand, the Rajput bard of Prithvirāja of Delhi, which had been lent to him from the Library of His Highness the Mahārājā of Benares. He said that about eighteen months ago, the Rev. J. Long brought to the notice of the Society that a complete MS. of Chand's works had been presented to the Library of the Agra College, by His Highness the Mahārājā of Jeypur, and an application was thereupon made to the Principal of the College by the Society for the loan of it, in order to have it carefully examined by a competent scholar. The loan, however, was declined, and on a subsequent application to His Honor, the Lieut.-Governor of the North Western Provinces, the MS. was referred to J. Growse, Esq., a member of the Society, for examination and report. In the mean time intelligence was received of the existence of two MSS. of the work, one in the Library of His Highness the Rāo of Baedlah, and the other in that of the Mahārājā of Benares. The last is a royal quarto of 697 pages, having 24 lines to the page. This would give a little more than 16,000 verses for the whole work. But the MS. did not appear to be complete, as it had no invocation at the beginning, nor the usual introduction, and commenced very abruptly with the entry of Anangapāla into Delhi. In the MS. noticed by Col. Tod, in his *History of Rajasthān* (I. p. 255) there were 69 cantos and nearly a hundred thousand verses, of which 30,000 had been translated by the Colonel into English.

The subject of the MS. was the life of Prithvirāja, the last Hindu Prince of Delhi, and his history therefore was the last chapter of the history of Hindu sovereignty in Delhi. The author of the poem

was the family bard and constant companion of Prithvirāja, and was accordingly an actor in most of the exploits he describes. Although abounding in fulsome panegyric of the true oriental cast, his work has the rare merit of being a contemporary history of a time of which no other history exists, and was therefore of the greatest interest to the antiquarian. Philologically it was also of great value, being the oldest specimen of Hindvi known, and as the hitherto missing link between the old Pali and the modern Hindvi, was calculated to throw much light on the history of Aryan Indian vernaculars.

The MS. comprises 31 cantos as follows :—

Contents of Chand's Prithvirāja Rāgas.

1. Entry of Anangapāla into Delhi and retirement to the Forest of Vadari.
2. The Battle of Ghaghar.
3. The Expedition to Karnāta.
4. The Marriage of Chandrávatī.
5. The Assumption of Sovereignty by Jaitarāj.
6. The Defeat of Kāngarā Rāo.
7. The Marriage of Hansávatī.
8. Sovereignty wrested from Palhāra Rāo.
9. The Story of Varuna.
10. The Death of Somesvara.
11. The Overthrow of Pajjūn.
12. Chand's Pilgrimage to Dwárká.
13. Defeat of Kaimás.
14. Murder of Bhīma Bhaṭṭa.
15. The Early life of Sanjogatá.*
16. Description of Vinayamangala.
17. Anecdotes of S'uka.
18. The Defeat and Destruction of Báluká Rāo.
19. Assumption of Sovereignty of Pajjūn.
20. The Battle of Pungasámanta.
21. The Cursed Hunt.
22. Description of Delhi.
23. The Story of a Jangama.
24. The Six Seasons.

* An English translation of this portion was published by Col. Tod in the Asiatic Journal for 1839.

25. The Penance of Sanjogotá.
26. Life of Balukáráya.
27. Defeat and Destruction of Kaimás.
28. The Fort of Kedár.
29. Description of Kanouj.
30. The Huge Fetters.
31. The Charmed Arrow.

The following papers, the reading of which was postponed at the last meeting, were read.

I. Mr. W. T. Blanford's Notes on Abyssinia.

Senafé, March 11th, 1868.

I went out for a week with Carter (who has charge of the G. T. Survey, to Tekoonda and Halai, over one of the worst hill roads I ever saw. However, it was an interesting trip; I got a good number of animals, and sketched in the Geology pretty fairly. The table-land here runs out in great spurs of sandstone, and between these are valleys deeply cut into the Metamorphics below. Near this are a few hills of trachyte and basalt, apparently resting on the sandstone unconformably. No fossils are discoverable. I want now to get on to Antalo and see the oolites there; these sandstones may perhaps belong to them. Whether I can really do any geology worthy of the name or not, depends upon how long the expedition lasts. Hitherto I have done very little, and if all is over, as many expect, by June, I shall not have seen much.

In Zoology, I am doing much better; I have upwards of 200 species of birds and mammals, since I left Zoulla; that is, in less than a month. My last valuable capture was a pair of bearded vultures, (Lämmergeyers) and a Klipspringer (*Oreotragus*) which I shot yesterday. The Lämmergeyers abound in this camp, and I should have bagged one this afternoon, I think, if a man had not got in the way. They are very fine birds, though this is the smaller species, (*Gypaëtus occidentalis*, Bonaparte, I believe) and measures $1\frac{1}{2}$ feet less in the stretch of the wings than the Swiss and Himalayan ones. I have also a pair of the curious ground hornbill or Abbagamba mentioned by Bruce (*Bucorvus* v. *Tinctoceros Abyssinicus*). They are tolerably common, walk about on the ground and feed on insects.

They do not appear to perch on trees at all. All the hornbills (I have now four species) are marvellously insectivorous, and even the barbets (*Pogoniorhynchus*) of which I have I think, three species, are the same.

I find there is a well marked intermediate fauna on the slopes of the hills, consisting of birds found neither here on the highlands nor on the plains about Zoulla. So I have sent one of my skimmers to Undul to collect. Sturt of the Land Transport Train, a very fair ornithologist, has promised to take care of him and shoot birds. Amongst other things, there are two woodpeckers there, of each of which I have a single specimen only, and many other birds. There are several of which I did not secure specimens at all: however, I hope to get them. I am not sure if any mammals are peculiar. There is a jackal-like beast which I have not seen elsewhere, but it may occur on the table-land.

15th. Since I began this, I find that the traps are far more extensively developed around this than I at first thought. There are a lot of trachytes, so exactly resembling sandstone, that I had marked them as such: I now find that they are clearly unconformable upon them. I have scarcely ever seen a greater sell. Some of the volcanic rocks, when slightly decomposed especially, cannot be distinguished even under a lens from fine argillaceous sandstone, and I doubt if I should ever have made out their real nature, had not some of them been so very columnar that their trappean nature was evident. In one hill near this, there are some of the finest columns I ever saw; 200 or 300 feet long and as regular as possible.

You will perhaps have heard that Beavan has been very ill and prevented from coming out. A Mr. Jesse is appointed in his place and is now I believe in Zoulla. A second man, (Danford or some such name) is with him, and I understand they are hard at work. Zoulla is far better now, I suspect, than when I was there, for the heavy rain has made the whole place green and many birds and other animals, elephants amongst others, have gone down towards the coast. I have not seen an elephant yet. The biggest wild animal I have come across has been Kqodoo. I saw three different bucks yesterday and a herd of does, but could not bag one. The species I believe is different from that of the Cape, but the buck is a noble animal, as large as a buck sambhur. The does are very like cow Nylgai, except

in having deer-like tails. Like the Nylgai too, they keep in herds away from the bucks, which are found solitary in general. Several of the sportsmen here persist in declaring that they have seen true deer with antlers. The fact is, they have seen koodoo. The very open curve of the horns, especially when they are not very large, makes them look marvellously like antlers at a distance.

Geology of the road from Senafé to Antalo.

Camp Antalo, March 29th, 1868.

Senafé, as I before mentioned, I think, is on sandstone, upon which a series of trachytes and basalts rest quite unconformably; the sandstone itself resting on metamorphics, which occupy all the lower ground and form many of the hills as far as Goona Goona, the first march. Here the sandstone comes in, in force, and continues for the main part of this distance to Attegerat, the 3rd halting place; trap hills occurring here and there, and a portion of the route being over them. From Attegerat the road passes over sandstone to beyond the Mai Wahiz, the 4th halting place, a high range of trap hills flat at the top, running along the west of the road; and beyond Mai Wahiz the road descends to a great plain of metamorphics, on the west of the watershed between the Nile tributaries and the salt plain; for it has been ascertained that the drainage of the Eastern flank of the Abyssinian highlands never reaches the sea, but is intercepted and lost in the great salt tract, below the sea level, which extends from just south of Annesley Bay to near Tajurra. The metamorphics extend beyond Ad Abaga (the 5th march) until near Dongolo, the 6th. Here, after descending a steep hill, a great change takes place. So far all has been simple enough; metamorphics below, sandstone above them, and trap capping the whole; the two upper series nearly horizontal, and near Attegerat apparently almost conformable; and the road passes from one to the other as it ascends and descends. At Dongolo just below the Ghat, sandstone comes in with a strong westerly dip. I had not time to make out whether it was faulted against the metamorphics or deposited in a hollow. Just beyond Dongolo, limestone succeeds, apparently resting on the sandstone, but of this I am extremely doubtful, for near this, sandstone appears to overlie the limestone. This limestone continues for upwards of 60

miles, to this place, occasionally capped by trap, and in one or two places granitoid gneiss emerges through it. Fossils abound, but these are very ill-preserved in general, and I have not had much time to hunt for them. *Ostrea*, *Terebratula* and several Lamellibranchiate bivalves are the most frequent forms. Ferret and Gullmier I believe, mark this tract as Oolitic, and doubtless they had better grounds for their opinion than I have yet seen. I can only say that the *Ostreas* look like secondary forms, and, as a guess, I should have suspected the rocks to be Jurassic or Cretaceous, which is confirmatory of the view taken by the French engineers. Doubtless, however, they obtained specimens which were compared by competent palaeontologists.

Perhaps one of the most interesting things is that here, as in India, cotton soil abounds; but only on trap or in its immediate neighbourhood. It is exactly like Indian regur; just as abominably sticky after rain, and just as full of holes as the black soil of Guzerat and Malwa.

The road throughout, I should have mentioned, is close to the watershed, this route having been specially chosen for the purpose of avoiding the deeper ravines leading to the great hill tributaries, the Mareb and the Takazze.

Zoology.—I can only give you very few notes on Natural History. To my great surprise, the country is remarkable for the paucity of large mammals. They are far fewer than in India. From all accounts I had ever heard, I should have imagined the grassy plains we have traversed would have abounded in the different Antelopes. Nothing of the sort; not a wild animal is to be seen anywhere larger than a hare, until near this. Here two small kinds of antelope are found, which I cannot identify at present, as I have no books with me. One is of a reddish colour, about the size of the Indian Gazelle, with short straight horns: the other is mouse-coloured with a peculiar long muzzle. I am told it is the kleinbuck of the Cape. There has evidently been a change in the fauna since we have crossed into the Nile drainage, but it is not great. The *Hyrax*, some distance this side of Attegerat is the same as at Senafé. The hare appears to be the same, and I think the jackal too. The only *Hyæna*, I am pretty certain, is *H. crocuta*, and he is to be heard just outside one's tent every night. I shall not forget the row they make soon. Lions, elephants, hippopotami, rhinoceroses, giraffes, zebras and al]

the big antelopes are conspicuous by their absence. Amongst birds, the most interesting I have noticed is *Corvultur*, the great carrion crow, with a curved sub-vulturine bill, which Jerdon, I think, is quite wrong in tracing to any affinity with the big ground hornbill. The latter, I scarcely think, can be a carrion eater. He is mainly insectivorous, and his habits are more those of some of the Ibises, picking over ploughed fields and meadows, or sometimes, like a bustard, hunting in high grass, for locusts, I suspect. They are in pairs and threes, rarely in larger numbers. Lämmergeyers are less common here than at Senafé, but still I frequently see them. I think I spoke of the species as *occidentalis*; I rather suspect now it is *Gypaëtus nudipes*, as the tarsus is quite bare. This, I believe, is the reverse of what is stated by Bonaparte. One of my interesting specimens is a true Concal (crow pheasant) white below, which Lieutenant St. John gave me. It is especially remarkable for having a long hind claw. Its habits, flight, &c., are exactly those of the Indian species. There are two kingfishers here, a *Ceryle* with the usual pied plumage, and a blue kingfisher. I have only seen the former, and he appears to me different from the common Indian species, but I did not obtain a specimen. I shot a Swift at Senafé very near *Cypselus melba*, but differing. It may be the same species which has just been described by Tristram as occurring in Southern Africa. I have no more *Nectariniae*, nor any other tennirostral birds that I can remember. One small parrot with a short tail occurs in pairs. I have not seen a woodpecker nor a true cuckoo on the tableland. Amongst the Sylvians, the *Saxicolinae* are most conspicuous. I have now several species of true *Saxicola*, two of *Pratincola* and two of a genus closely allied to *Thamnobia*, and I believe I have not collected all I have seen. There is a very beautiful starling with bright iridescent plumage, which abounds in some places near this. A superb blue Roller very like the Indian form, but with two long central tail feathers, occurs occasionally, but it is rare. I have two very poor specimens but hope to get more.

The large two-spurred partridge of Senafé has disappeared. It is replaced by a species with red legs and red naked skin round the eyes, said to be two spurred, but the specimens I have seen are either females or young males and spurless. I have a pair of very handsome sandgrouse

(*Pterocles*) and a small bustard or florikin. One of the most curious birds I have obtained lately is a very small grey dove not larger than a lark, with a very long tail. As I have no books I cannot identify it. A waterhen is, I think, the only wader, and I have seen a duck which is, I hear, a mallard-like bird, probably allied to the Indian *Anas pœcilorhynchus* (or some such name) but I have not shot a specimen. I have not seen a Tern in the country.

I have not so much as seen a snake or a tortoise on the highland; frogs and toads are scarce, and lizards far from numerous. I have two species only, one of them a Scinque; I have no fishes as yet: there are some, however, of fair size in the streams. It is a wretched country for land shells. On the limestone, one *Helix* certainly abounds, and there are one or two *Pupas*: that is all I can find. Insects are rare at this season of the year, and I have neither time nor appliances for collecting them.

Captain Beavan, as I think I mentioned, has been unable to come out, and the Zoological Society have sent out Mr. Jesse. He has an assistant with him, and both were, by the last accounts, busily collecting at Zoulla. Markham, the geographer, is in front with the advance. Dr. Cook has been very ill, but is somewhat better; he is working at Meteorology at Senafé.

In the probable event of the expedition terminating soon, I have made the following disposition with regard to my collectors. One man is at Undul in the pass with Captain Sturt of the Transport Train. Another who can shoot, I have left with my Madras boy, who can skin a little, to assist him at Attegerat. The third I carry on with me. He is a lame man (Gooloo by name) and consequently rather an impediment, but he skins well and quickly. Now and then I get specimens from various officers, and altogether, although, if the expedition is over in June, as appears probable at present, the time will have been far from sufficient to enable me to collect the fauna thoroughly, I hope to have a very fair collection.

Camp Esindyé, Wadala plateau, near Magdala, April 1st, 1868.

I have been unable to write for a long time. Finding I could not get my kit on fast enough, I left everything behind at Ashangi and went on with my horses. I just reached in time to go into

Magdala behind the storming party. I lost by one day the skirmish on Good Friday. However I saw everything else.

I will write more another time when I have time and paper. Here at 10,000 feet are several peculiar birds. I am collecting as well as I can by myself, but it is slow work. I have returned before the army.

It was a hard march up : constant rain from Dildee, and almost from Ashangi ; long marches, frightful roads, cold, and sundry other small drawbacks ; water was plentiful at Zoulla when compared to Magdala and the chief's Camp at Braga. However all keep well. I am in good health, but I have been wretchedly unlucky. My best horse, a most useful little Arab, has been stolen, and the only man I have with me who can cook, has broken his arm. However, I am not done for yet, and I am trying to induce the chief to send me to Lake Dembea or to Shoa. But I fear he will not.

All south of Antalo is trap ; basalt and trachyte in horizontal beds at least 5,000 feet thick. Ashanghi is a curious little lake of sweet water without an outlet above ground. Maps all poor.

Zoulla, June 8th.

I wrote you a few lines about a month ago from Esindye I think ; thence I hurried into Ashangi, getting a few things only from the high Wadda plateau, for my letter ordering my men up was delayed, and they never came up. At Ashangi I waited for the chief, as I had written to apply to be sent with an escort to Lake Dembea and the Chelga coal field, and, if practicable, beyond into Kwarra and the Nile country. However the chief first wrote to me to give my plans in detail, which I did, and then refused even to discuss the matter. At Ashangi I found Cook, whom I had left ill at Senafé. We came back together.

The best thing I got at Ashangi, was an extraordinary rat with the habits of a mole or of a bamboo rat, but living on roots of grasses just as the bamboo rat (*Rhizomys*) does on roots of bamboos. I got a few water-birds too, I came ahead of the chief's camp to Antalo ; halted there a day ; then slipped off without a convoy and came on to Agala and Dongolo where I found, at last, a few decent fossils in the limestone. They are Oolitic I think. I have a *Pholadomya* and a *Trigonia*, like the little species so common in the Cutch Oolites. I also obtained several birds I wanted. Thence I marched with the

chief's camp to Senafé and down to Koomeylee, staying three or four days at each. At Koomeylee the heat was great; 112° and 113° in the shade, but it went down to 95° at night. Here it is cooler; never much more than 105° I think.

The fauna at Koomeylee had totally changed since February. Many new birds having arrived, and all or nearly all the old ones vanished. I got a few good things.

W. T. BLANFORD.

The President mentioned that in more recent letters Mr. W. Blanford stated that altogether he had been able, notwithstanding the shortness of the time, to bring together about 900 specimens of natural history.*

On the Anatomy of *Sagartia Schilleriana*, and *Membranipora Bengalensis* by Dr. F. Stoliczka. (Abstract.)

Dr. Stoliczka communicated to the meeting the results of his examination of the anatomy of *Sagartia Schilleriana* and *Membranipora Bengalensis*, two species found living in brackish water at Port Canning.

After having briefly pointed out the circumstances which led to the discovery of the *Sagartia* [this being a species of the *Actiniaceæ*] Dr. Stoliczka stated that there are hardly any instances recorded of species of this kind of corals having been permanently found living in brackish water. The *Actinia* [using this name in a general sense] are as a rule only met with attached to rocks along the sea shore, generally at a moderate depth, or hidden in crevices and holes between the tide-marks. The present species which belongs to the genus *Sagartia*, was found living, attached to old trunks of trees, in water which, according to an analysis of Mr. D. Waldie, only contains about one-third of the saline constituents of pure sea water, in 1000 parts of which they vary from 32—37 parts. In general, however, all the principal constituents, the chlorides, iodides, &c., are present, the difference only affecting the quantity, not the quality.

The principal and distinctive characters of the species, *Sagartia Schilleriana*, are the extreme softness and transparency of the body,

* Letters by recent mails announce that Mr. Blanford was starting for Bogos, to the North-West, from Massowah, from which expedition he looked for many additions and novelties.—Ed.

having the column marked with longitudinal, alternating, greenish bands, the rest of the body being dull whitish; the number of septa usually amounts to 48; the ovaria are bluish purple, the craspeda yellowish or greyish white and the acontia purely white.

Dr. Stoliczka then drew the attention of the meeting to the most interesting points relating to the anatomy of the species. He first gave a general sketch of the principal parts of a *Sagartia*, and then stated that in the present instance, the body was found to be composed of five different layers. The outermost is almost only represented by a mucous substance, chiefly composed of large *cnidæ*, or nettle cells, and some few, pale green, pigment cells. Then follows a thin muscular layer, principally composed of concentric or cross fibres; next a rather thick layer of green pigment, then again a thick muscular layer gradually passing into a tough, muscular tissue, in which skleroids of two kinds are imbedded. The one kind are long and cylindrical bacilli, with short lateral processes and consist of carbonate of lime; the other kind are thin, flat, rectangular plates of various forms consisting of silica.

The nature of these skleroids, after their difference of form has been observed by simple maceration of the tissue, was positively ascertained by burning a specimen in a platina crucible, until all organic matter disappeared. The result was, that a perfect skeleton of the animal was obtained, representing an irregular network of solid, white fibres. Upon placing a portion of the skeleton in hydrochloric acid, the largest portion, being carbonate of lime, was dissolved, leaving behind a very thin membrane composed of the siliceous skleroid particles. It is to be hoped that this observation will induce other naturalists to examine similar species, and there is a probability that the definition of the *Anthozoa malacodermata* will have to undergo considerable changes.

The tentacles are usually arranged near the periphery of the disc in apparently alternating circles, the number of them rising up to about 150 or 160. The *acontia*, *craspeda* and *ovaria*, all are attached to the internal side of the strongly muscular larynx. The *acontia* are very long, purely white bands, solely consisting of long *cnidæ*, being transparent cells with more or less prolonged, retractile and bearded stilets, called *celothecæ*. These *acontia* are issued through the holes

(*cinclides*) of the integument, whenever the animal is irritated, serving as defensive organs. The *craspeda* are similar bands of a yellowish colour, but they are shorter and never ejected, they seem to be connected with the digestive system; their composition is similar to that of the *acontia*, except that there is in the centre a considerable accumulation of an intercellular substance. The *ovaria* are long strings, lying between the mesenterial folds; there are 12 pairs of them present composed of eggs only. Thread-like organs chiefly composed of spermatozoa appear to be only occasionally formed.

A small live specimen and parts of the solid skeleton were exhibited, and the microscopical structure of the body illustrated by diagrams and preparations.

With reference to *Membranipora Bengalensis*, [a species of *Bryozoa*, the lowest organized molluscs], Dr. Stoliczka said that the *polyzoarium* usually consists of a single layer of hexagonal, flat cells which are arranged in alternate rows. The upper part of the cells is membranaceous, only in old specimens partially solid. The animal is whitish, and the statoblasts are greenish. An interesting observation was made regarding the progressive growth of the *polyzoarium*. At first only a small, very thin, membranaceous cell is formed, being filled with a greenish granular substance. In the next stage a small embryo, with a transparent centre is visible, but the cell is still without an aperture. Subsequently the tentacles become traceable in the translucent centre of the embryo, and the dark, granular substance diminishes in the same degree as the size of the embryo increases; the cell only communicates with the neighbouring ones by small lateral holes. At last the embryo is seen to be attached to the posterior wall of the cell by a few thin muscles, a long thread is developed at the base, so as to fix the cell and support its subsequent attachment, and an oval aperture is formed in the front part of the upper membrane. The cell is then perfect, the animal communicates direct with the surrounding medium, the statoblasts are soon developed and the structure of the cell becomes gradually more solid. Specimens of the *Membranipora* were also exhibited; the species appears to be common in all the brackish waters of the Sunderbunds.

"Notes on some stone implements found in the district of Singbhoom by Captain Beeching," communicated by V. Ball, Esq.

When in September last, I laid before the Society an account of a chipped celt which was found in Manbhoom, I ventured to predict that an examination of the adjoining district of Singbhoom, which is at present inhabited by several aboriginal races, would probably result in the discovery of traces of the stone age. The chert flakes and knives now exhibited, were found in the early part of the present year by Captain Beeching when, in command of a Company of the 10th Madras N. I., he marched from Ranchi to Chaibassa for the purpose of quelling the disturbances in the tributary state of Keonjur. While awaiting orders at Chaibassa he was so fortunate as to make the discovery, described in the following note :

"The accompanying chippings were found principally at Chaibassa in the Singbhoom district and also at Chuckerdherpore, a town about sixteen miles off. They were generally to be seen on or near the banks of the river, and attracted the eye at once by the striking difference they presented to the other stones lying near them. Some were lying loose in gravel, others in the sandy depressions and ravines near the river, and in one instance 'the chips' appeared to radiate from a small rocky mound, becoming more numerous as one approached the central point, until at last there was hardly a square foot of earth which did not contain several of them."

Chert of various degrees of purity is the material of which these flakes are made. In several parts of Manbhoom there is a bed of highly vitrified quartzite with conchoidal fracture. A similar one in Singbhoom doubtless furnishes the cherts.

In point of manufacture, these flakes are inferior to those from the Jubulpore district, the chert not yielding such sharp edges as the agates and flints of which the latter are made.

The reading of the following papers was deferred until the next meeting.

Notes on the Keriahs, an aboriginal race, living in the hill tract of Manbhoom, by V. Ball, Esq.

Dr. Mingay, on Malay animals.

Dr. King, on Birds of Goonah.

The receipt of the following was announced :—

1. Notes on the Kerials, an aboriginal race, living in the hill tract of Manbhoom, by V. Ball, Esq.
2. Notes on the Lion of Aboo, by G. King, Esq.
3. An endorsement from the Under-Secretary to the Government of India forwarding a classified list of races in the Punjab.

LIBRARY.

The following additions have been made to the Library since the meeting held in June last.

Presentations.

. Names of Donors in Capitals.

Bulletin de la Société de Géographie, April, 1868.—THE GEOGRAPHICAL SOCIETY OF PARIS.

Annual Report and Transactions of the Adelaide Philosophical Society, for the year ending 30th September, 1867.—C. A. WILSON, Esq.

Journal Asiaticque No. 39, 1867.—THE ASIATIC SOCIETY OF PARIS.

Actes de la Société D'Ethnographie, No. 8.—THE ETHNOGRAPHICAL SOCIETY OF PARIS.

Indische Studien, x. 3.—Dr. A. WEBER.

The Journal of the Bombay Branch of the Royal Asiatic Society, 1865-66. THE SOCIETY.

The Report of the British Association for the Advancement of Science, 1866.—THE ASSOCIATION.

Report of the Committee of the Bengal Chamber of Commerce from November, 1867 to April, 1868.—THE BENGAL CHAMBER OF COMMERCE.

Anthropological Review, Vol. VI. Nos. 20 and 21.—THE ANTHROPOLOGICAL SOCIETY OF LONDON.

Annual Report of the Lahore Lunatic Asylum for the year 1867.—THE GOVERNMENT OF BENGAL.

Report on Leprosy by the Royal College of Physicians.—DITTO.

Records of the Geological Survey of India, Vol. I. Part I. 1868.—DITTO.

Annual Report of the Geological Survey of India and the Museum of Geology, Calcutta.—DITTO.

The Calcutta Journal of Medicine, Vol. I. No. 5.—DR. MAHENDRA-LALA SARACARA.

The Alps and the Himalayas, a Geological Comparison by H. B. Medlicott, Esq.—THE AUTHOR.

Hyat i Afghani by Mahommad Hyát Ali.—THE AUTHOR.

The Calcutta Gazette or Oriental Advertiser, 1785-86, 1789-90.—THE REV. J. LONG.

The Samachara Darpana, 1824.—DITTO.

A Collections of 50 prints from Antique gems.—DITTO.

A Calendar of Indian State papers, Secret Series, 1774-75.—DITTO.

The History of the Christian Church in Maharashtri by the Rev. C. G. Barth.—DITTO.

Naaukeurige Versameling der Gedenkwaardigste Reysen na Oost en west Indien.—DITTO.

Discours sur les affaires de Pologne prononce par M. Le Mrs de la Rochejaquelin.—DITTO.

Abolition du servage en Russie.—DITTO.

The Polish question, or an Appeal to the good sense of Englishmen by a Russian.—DITTO.

Proverbs, Malayalam, Tamul, Chinese, Panjabi, Servian, Maharashtiri and Hindi illustrating the popular feelings and various nationalities.—DITTO.

Exchange.

The Athenæum for March and April, 1868.

Purchase.

Comptes Rendus, 13, 14 and 15 ; 1868.

The Annals and Magazine of Natural History, No. 5, 1868.

Revue de Zoologie, No. 3, 1868.

The Ibis, No. 14, 1868.

Gould's Birds of Asia, Part XX.

Beddome's Ferns of British India, Part XX.

Lecons sur la Physiologie et l'Anatomie Comparée by E. Milne Edwards, Tom IX. Part I.

Revue des deux Mondes, 15th April and 1st May, 1868.

Revue Archéologique, Tom XVII. No. IV.

The Numismatic Chronicle, Part I., 1868.

The Edinburgh Review, No. 260.

The Calcutta Review, May, 1868.

Assyrian Dictionary, by E. Norris, Part I.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR AUGUST, 1868.

A Meeting of the Society was held on Wednesday, the 5th instant, at 9 o'clock P. M.

T. Oldham, Esq., President, in the chair.

The minutes of the last Ordinary General Meeting were read and confirmed.

The receipt of the following presentations was announced :—

1. From Bábu Hemachandra Deva—

A nest of *Orthotomus longicaudus*.

2. From the Barrackpore Park Menagerie—

A specimen of *Mellivora ratel* (Badger).

A specimen of *Pavo muticus*.

3. From Lieutenant J. Gregory—

A specimen of *Teliponus*, from the Naga Hills.

4. From Bábu Rákháladása Háladára—

A quantity of *Kaolin* from Mánbhám.

5. From J. Awdall, Esq.—

A copy of *Grammaire Polyglotte contenant les principes des langues Arabe, Persane, Turque et Tartare, par Le P. Minas Medici*.

6. From the editor—

A copy of *Prasannarághava Nátaka*, edited by Pandita Govindachandra Sástri.

7. From the Superintendent Government Mathematical Instrument Department—

Two base line chains, 100 feet each.

A Zenith Sector, with stand.

A Zenith micrometer, with stand.

Formerly used by Colonel Lambton in the G. T. Survey.

8. From Dr. D. B. Smith—

Twelve *Udia* skulls.

9. From the Calcutta Brahma Samāja—

A copy of The Doctrine of Christian Resurrection.

A copy of Vedantic Doctrines vindicated.

A copy of Selections from Vedanta.

A copy of Hindu Theism.

A copy of Theist's Prayer-Book, and twenty other small pamphlets.

10. From Colonel J. C. Haughton—

A copy of *Padmaduta Kāvya*, by Siddanātha Vidyāvāgisa.

A copy of Addresses delivered at the Hitoishini Samāja of Cuch Vehara.

11. From W. Oldham, Esq., LL.D., Offg. Magistrate of Ghazeepur,

Some earth which fell in a shower at *Kootubpur*.

The following letter, addressed to the Secretary, accompanied the donation :—

Ghazeepur, the 22nd July, 1868.

'A report has been received, which there is reason to believe is authentic, that on the 15th instant at noon in Kootubpur, of the Shadiabad Pergunnah of this district, a shower of earth moistened with rain fell.

Small balls of moistened earth about the size of peas fell slowly and for considerable time.

I forward herewith specimens of the earth which fell.

From the 18th of June, until the 5th of July, no rain fell in this district; since then we have had abundant rain. The rains set in generally on the 17th, but on the 15th and 16th local showers occurred.

I am not aware whether the shower has any scientific interest or importance, or not; but if it has, you will, I believe, find that, a day or two later, a somewhat similar shower fell at Cawnpur.'—

The President stated that the earth alluded to had been carefully examined under the microscope, and that it was nothing but the ordinary surface silt of the plains of Bengal, which might have come from almost any part of the Gangetic plain. Occasionally the character of

the earth which fell in this way as mud in showers, was of such marked and distinctive nature, as would enable a tolerably accurate conclusion to be arrived at, regarding the direction from which it had been carried, or the locality from which it had first been lifted to the clouds, to be again deposited with rain.

The following gentlemen duly proposed and seconded at the last meeting were balloted for, and elected Ordinary members:—

H. E. Perkins, Esq., C. S.

Pandita Chandramohana Gosvámi.

Captain J. W. Muir.

R. T. Hobart, Esq., C. S.

The following are candidates for ballot at the September meeting:—

Baron v. Ernsthause, proposed by Mr. F. Schiller, seconded by Dr. F. Stoliczka.

R. M. Adam, Esq., proposed Mr. F. Schiller, seconded by Dr. F. Stoliczka.

E. Ch. Van Cutsem, proposed by Dr. F. Stoliczka, seconded by the President.

R. V. Stoney, Esq., C. E., proposed by the President, seconded by Mr. C. A. Hacket.

C. Lazarus, Esq., proposed by Mr. G. Robb, seconded by Mr. D. Waldie.

Letters from the following gentlemen intimating their desire to withdraw from the Society were recorded—

Lieutenant-Colonel B. Reid.

Colonel J. C. Brooke.

The Hon'ble J. B. Phear, in accordance with the notice given at the last meeting, moved—

That the Society record a vote of thanks to Mr. H. F. Blanford, who had lately resigned the General Secretaryship, for his services.

Mr. Phear said that in proposing the resolution, he should use very few words, because he thought that, even on an occasion like this, the praise which was unspoken was the highest praise. Mr. Blanford had been many years a zealous member of the Society, and for several years he had actively and well discharged the duties of Secretary. He would ask the members to call to their minds what this service really involved. He thought he was not wrong

in supposing that they considered their Society as the first Scientific Society in India. They were proud of their Ethnological and Antiquarian researches. And they were willing to flatter themselves that they could correspond on equal terms with the Literary and Scientific Societies of Europe and America. Let them remember that in these things their Secretary was the mouth piece of the Society, and that certainly Mr. Blanford in discharge of these duties had never failed to reflect credit upon the body. It was few persons who possessed the qualifications needed for the post, and fewer still, who would sacrifice their private leisure to perform its functions. If they were so fortunate (as he believed he might venture to assume they were) that they had already secured Mr. Blochmann to succeed Mr. Blanford, they must not forget, that they had enjoyed the further fortune of having Mr. Blanford as the predecessor of Mr. Blochmann, and unless they gave the only return in their power, unstinted thanks, to the retiring Secretary, they would be virtually telling Mr. Blochmann that he had undertaken a thankless office.

Dr. Fayer seconded the motion, which was unanimously carried.

Read a letter from the Under-Secretary to the Government of India, For. Dept., forwarding further report on the Cromlechs of Coorg, dated Coorg, 22nd May, 1868.

‘In continuation of my letter No. 3301 of the 4th March last, I have the honor to report that in accordance with the instructions of the Commissioner, I have caused eleven of the Cromlechs, lately discovered in the vicinity of Veerajenderpett, to be excavated, and beg to submit the results of the explorations made by myself and my Assistant, Lieutenant J. S. F. Mackenzie.’

2. ‘The parallel barrows, or mounds of earth, alluded to in my former report, though containing one or two Cromlechs, were found not to cover continuous rows of these structures; but the Cromlechs now excavated were situated below large mounds and covered over with trees and dense brushwood, showing that they had not been touched by the hand of man for ages past. These structures consisted, like the others reported on, of oblong chambers, the bottom and sides composed of large single slabs of unhewn granite, and surmounted by a large slab of the same description. The longest chamber was 7½

feet long, by $4\frac{1}{2}$ broad and 5 feet deep. The several dimensions were as follows :—

| No. | Length. | Breadth. | Depth. |
|-----|------------------|------------------|------------------|
| 1. | 6 feet 4 inches. | 3 feet 8 inches. | 3 feet 8 inches. |
| 2. | 6 " 6 " | 4 " | 4 " |
| 3. | 7 " 6 " | 4 " 3 " | 5 " |
| 4. | 6 " 9 " | 3 " 4 " | 2 " 6 " |
| 5. | 5 " 6 " | 3 " 3 " | 3 " 9 " |
| 6. | 5 " 5 " | 4 " | 3 " 6 " |
| 7. | 6 " | 3 " 3 " | 3 " 3 " |
| 8. | 6 " | 3 " | 3 " |
| 9. | 7 " | 3 " | 4 " |
| 10. | 6 " 3 " | 3 " 9 " | 3 " 6 " |
| 11. | 5 " | 3 " 9 " | 4 " |

3. 'All these Cromlechs had square or segmental apertures which the natives always point out as a proof that these structures used to form the abodes of the pygmy race, described in their legends. Some have supposed that these apertures were made use of for the purpose of introducing the cinerary urns and bones of the members of the family into the sepulchral vault, as they died one after the other. I am inclined to this belief, as the urns were invariably discovered in each corner, and often piled one on the top of the other, and these openings are always at the top of the front slab, and immediately below the super-incumbent slab. The doors or apertures were generally found to face towards the east, but strange to say, one was found facing to the north, and a few to the west. They are $1\frac{1}{2}$, $1\frac{3}{4}$, and 2 feet wide.'

4. 'I am glad to be able to state that the excavations resulted in the discovery of several antique-shaped urns and pots, composed of thick red and black pottery, apparently highly glazed, some of which are on four feet, and some are tripods. Lientenant W. Freeth, the Assistant Superintendent of the Revenue Survey, has kindly sketched and lithographed a group of these urns, and his lithographed copies will convey a better description of these antique vessels than any words of mine can do. (Copy of these drawings is given, Plate 3.) They are all full of hard earth, apparently well rammed in by the rain-fall of successive monsoons. I had some of the damaged

vessels broken up, and the contents carefully sifted, but could not discover any traces of bones, whether calcined or not. This would lead to the belief that these vessels had not been used as cinerary urns. The small fragments of charcoal were generally found in the earth inside the Cromlechs and smaller cists.'

5. 'Below the sketch of the urns, Mr. Freeth has drawn some of the pieces of iron weapons found in these Cromlechs. The large one would appear to have been a spear or large javelin, and the others arrows and hilts of daggers.'

6. 'There are no concentric rows of stones round these Cromlechs, as generally found elsewhere; but I found that the Cromlechs at Fraserpett had distinctly such rows of upright stones round each. These look as if they had been tampered with, though not for many years past; but I will cause them to be carefully excavated next month, and will submit a separate report on the results.'

(Sd.) R. A. COLE,
Supdt. of Coorg.

The President, in inviting the remarks of the Members on this communication, said: It was one of the most interesting discoveries of the kind which had yet been recorded in India. They had here what were called Cromlechs, but which are really more of the type of the Kistvaens of Northern Europe than of the true Dolmen, of a very peculiar construction, of double chambers, such as are represented in a previous number of the Proceedings, existing under circumstances which would prove that for a very long period at least, they had not been disturbed. They were covered by large mounds of earth, obviously artificial, and this earth covered with a thick growth of underwood and large timber-trees. And on opening these curious structures, remains of pottery were found as represented in the drawings before the Society (Plate 3), which differed materially from the pottery now in use. In a slight degree the forms of the vessels were different; the one more especially of an elongated amphora-like shape, (Fig. 5), also that shewn in Fig. 7, and Fig. 4, the outline of which, combined with the peculiar arrangement of the foot or feet, seemed to him not exactly similar to those now in use. This, however, was a point by no means easy to decide, as the forms of pottery in common use, were countless, and varied most materially in different

districts. The principal point of difference consisted in the facts as stated, that this pottery was very thick and highly glazed, two facts in which it most materially differed from pottery of similar forms now generally in use.

Then, along with this pottery, were found several remains of iron weapons or tools, as represented in the drawings. These were peculiarly interesting. Several years since he had noticed to the Society the curious fact that wherever any weapons or tools, or any trace of metallic material had been found in such structures, they had invariably been of iron. He was not aware that anything so perfect as these now described had been previously found, but wherever found, or in whatever condition, they had always been of iron. Now, knowing the rapidity with which iron decomposes in this climate, and looking to the tolerably well preserved condition in which these remains were found, it would lead him to attribute to the period of their entombment, a date much less ancient than would at first appear justified by the rude and almost unhewn nature of the structures in which they have been found. It was strange that among all these old Cromlechs, and other structures of unhewn stone, not a trace of stone weapons had been found, although within short distances they occur abundantly.

The character and shape of the iron remains found in these Coorg 'Cromlechs,' would also indicate a more advanced knowledge of the art of metallurgy than could be easily reconciled with any very early date. Of course it is possible that the race who last used or occupied these structures, was totally different from that which first constructed them, but he thought this was an exceedingly improbable supposition. He hoped the Commissioner of Coorg would continue these investigations, and was confident that other and valuable discoveries still awaited enquiry.

Mr. Phear was inclined to think that the forms of the earthen vessels, represented as having been found in the Cromlechs, did not point to any distinction of race. All of them, excepting two, closely resembled the forms of vessels, which are in use among the people at this day, and the two excepted forms only indicated to his mind that among the authors of the Cromlechs the potter's art was somewhat in advance of that which flourishes in the country bazars now. In these

two, the lower part of the vessels exhibited the same general form as the others did: the deviation from the type took place in the upper part, where a sudden change in the curvature of the surface caused a cusp in the outline. The result no doubt was graceful, and a step in advance of the art, which produced the other, (as he thought) older form. It occurred to him that it might have been brought about something as follows: Experience taught the potter that his work would be materially facilitated, if he formed his vessel in two pieces, and afterwards united them. But in adopting this practice, which prevails almost universally in this neighbourhood, the potter still tried his best to keep to the original outwardly convex curvature. Then it was discovered by some innovator that the making of the vessel in two pieces afforded an excellent opportunity for giving variety to the form, and hence came the abrupt alteration of curvature exhibited in the two figures in question. He thought that even these forms, if his memory did not mislead him, might be paralleled in the bazars of this town. The three little feet, which appeared in some of the figures attached to the hemispherical surface of the vessel, to render it capable of standing, was a contrivance common enough now. It was remarkable that not one of the vessels figured had a base other than the trivet referred to, and in this respect they corresponded closely with the vessels in common use among the people at the present time.

Rev. J. Long asked if it was known what term or name the people applied to these *Cromlechs*, and whether this name was a word belonging to the language now in use there, or was a word only traditionally known. The value of Etymological research in cases where history was silent, was immense, and becoming daily more acknowledged. It would be desirable to know whether these words were applied indiscriminately to all such structures, or only to those of a peculiar type.

The President said the communications now before the Society gave no information on these points, but he would endeavour to obtain answers to Mr. Long's valuable suggestions and queries.

Read also a despatch from the Secretary of State for India on subjects of Architectural and Artistic interest in India.

India Office, London, the 28th May, 1868.

To His Excellency the Right Hon'ble the Governor-General of India in Council.

SIR,—I forward herewith, with reference to previous correspondence, copy of a letter* from the Lords of the Committee of the Council of Education, and desire that your Excellency in Council will issue instructions for a compliance, without any undue interference with their more important duties, with the wish of their Lordships for more detailed information respecting objects of Architectural and Artistic interest in India.

(Sd.) STAFFORD H. NORTHCOTE,
Dated 12th May, 1868.

From H. COLE, Esq., Science and Art Department, to the Under-Secretary of State for India.

'I am directed by the Lords of the Committee of Council on Education to thank you for your letter of the 1st instant, enclosing a copy of a Despatch from the Government of India, with a list of the objects of Architectural and Artistic interest in the Mysore Territory.'

'Their Lordships are of opinion that it would add to the value of such lists if, in future, some further details could be given.'

'It would be desirable to state, as respects each building, what is the style and date, its materials of construction, its present use, whether or not it is decorated by sculpture or colored decoration, and its present condition.'

'I am, therefore, to request that you will move Sir Stafford Northcote to direct that all the information that may be possible, may be given under the above heads in any future list which may be transmitted from India.'

The President stated that the Council wished this Despatch and its enclosure to be made known to the Society at large, in order that any individual member who might be able or desirous of contributing further information on the points referred to, might be aware of the kind and the extent of detail asked for by the Department of Science and Art.

* Dated 12th May, 1868.

The following papers, the reading of which had been postponed at the last Meeting, were read :—

I. *Notes on the Kheriahs, an aboriginal race living in the hill tracts of Mánbhúm, by V. BALL Esq., B. A.*

In the special Ethnological number* of the Society's journal, Colonel Dalton gives an account of the Kheriahs. He says that they are most nearly allied to the Juangas or Putoons, both forming branches of the Moondah family.† They are quite distinct from the Korewahs, another branch of the same family. A few colonies of this last mentioned race are, I believe, to be found in Mánbhúm.

The position of the Kheriahs having thus been established on the best authority, it is unnecessary for me to allude to it further; my simple object being, in connection with my note on the stone implements of Singhbhúm, to draw attention to a race who owe to their Arian conquerors what little traces of civilization are observable amongst them. I have had singular opportunities of seeing the Kheriahs in their homes, in the recesses of the jungle, where they live shut out and hidden from the surrounding world.

If we are disposed to regard these people as savages, their Sonthal and Bhumij neighbours do not treat them much better, *ban mánus* being a term commonly applied to them.

The Kheriahs shew a marked dislike for civilization, constantly leaving places where they have any reason for supposing that they are overlooked.

Their houses, generally not more than two or three together, are situated on the sides or tops of the highest hills: they stand in small clearances; a wretched crop of *bajera* being sown between the fallen and charred trunks of trees.

Close to the south boundary of Mánbhúm, there are a succession of hill ranges, of which Dulma (3047ft.), the rival of Parisnath, is the

* Page 155.

† In Vol. XI., p. 203 of the Journal, Lieut. Tickell described a race called Bendkars of Keonjur. They did not know of any relationship existing between themselves and the Kheriahs, but they are, in many respects, a similar race, living in the same kind of houses, on hill tops, and deriving their principal subsistence from the same roots and fruits.

highest point. On this hill I saw three or four neat little Kheriah cottages made of wattled bamboo, which, together with the small standing crop, had, for no apparent reason, been deserted. Further west, just outside the boundary of Mánbhúm on a plateau formed of trap, where there was a good water supply, the small Kheriah villages had assumed a somewhat permanent appearance. Occasionally Kheriah cottages are to be seen on the outskirts of villages; but this is a departure from what is one of the most characteristic customs of the race.

Besides the Kheriahs, there is another race called *Pahareas*, of somewhat similar habits, living on Dulma hill range. One of them told me that his race were superior to the Kheriahs, with whom they could neither eat nor drink. One of the chief distinctions between them appeared to be that the Kheriahs do not eat the flesh of sheep, and may not even use a woollen rug. It would be exceedingly interesting, if this custom could be traced to its origin; I do not remember to have seen it stated of any other race. In her respects the Kheriahs are not over-fastidious feeders. Both races eat cattle that have been killed by wild animals, and very possibly too, those that have died from disease.

The first Kheriahs I met with were encamped in the jungle at the foot of some hills. The hut was rudely made of a few *sál* branches, its occupants being one man, an old and two young women, besides three or four children. At the time of my visit, they were taking their morning meal, and as they regarded my presence with the utmost indifference, without even turning round or ceasing from their occupations, I remained for some time watching them. They had evidently recently captured some small animal, but what it was, as they had eaten the skin before, I could not ascertain. As I looked on, the old woman distributed to the others, on plates of *sál* leaves, what appeared to be the entrails of the animal, and wrapping up her own portion between a couple of leaves, threw it on the fire, in order to give it a very primitive cooking.

With regard to their ordinary food, the Kheriahs chiefly depend upon the jungle for a supply of fruits, leaves, and roots. I got them to collect for me specimens of the principal species they used; but as I found that, with few exceptions, they were included in the list of

edible plants which I described to the Society on a previous occasion,* I do not repeat them here.

Besides these, however, the Kheriahs eat rice, which they obtain in the villages in exchange for several jungle products, such as honey, *lac dhona* (from the *sál*), *tusser* cocoons, *sál* leaves, and bundles of bamboo slips called *khúrki*, wherewith the leaves are stitched into plates.

That the rice which they thus obtain in exchange, though small, is an important element in their daily food seems apparent from the fact that a large number of them are said to have died in the famine. I can only explain this by supposing that they lost heart on being deprived of what had been a regular source of supply, and failed to exert themselves in the collection of an extra quantity of roots. An explanation somewhat similar to this was given to me by a Sonthal who said, speaking of his own race, that those who underwent the labour of searching the jungles escaped, while those who sat in their houses wishing for better times, as a matter of course, died.

The roots which they obtain in the jungle are dug up with considerable labour from the rocky ground, by means of an instrument called *kánthi*. It consists of an iron spike, firmly fixed in a wooden handle. The point of this, as it is natural it should, frequently becomes blunted; to avoid the necessity of taking it to be sharpened perhaps half a dozen miles to the nearest *kumar*, the Kheriahs have invented for themselves a forge, the blast for which is produced by a pair of bellows of the most primitive construction. They consist of a pair of conical caps about eighteen inches high, which are made of leaves stitched together with grass; these are firmly fixed down upon hollows in the ground whence a pair of bamboo tuyers convey the blast produced by alternate and sudden elevations and depressions of the caps to a heap of ignited charcoal; in this the iron spikes are heated until they become sufficiently soft to be hammered to a point by a stone used as a hammer on a stone anvil.

The Kheriahs never make iron themselves, but are altogether dependent on the neighbouring bazars for their supplies. It is to this point that I wish more particularly to draw attention. Had they at any period possessed a knowledge of the art of making iron, con-

servative of their customs as such races are, it is scarcely likely that they would have forgotten it. It is therefore not unreasonable to suppose that there was a period, anterior to the advent of the Hindus, when iron was quite unknown to them, when, owing to the absence of cultivation in the plains, they were even still more dependent on the supply of jungle food than they are at present.

In those times their axes and their implements for grubbing up roots, were in all probability made of stone, and their arrows had tips made of the same material.

Owing to the timidity of the Kheriahs, I have not had many opportunities of speaking to them; frequently, on my approach to a house, the whole family fled, and hid themselves in the jungle, at other times I have found the houses empty, all the family having gone out into the jungle to collect food.

On several occasions, however, I have had the men brought into camp, when I have questioned them as to their language and customs; in this way I have formed a vocabulary which, however at present in a crude state, I hope to have further opportunities of testing its accuracy, and correcting it by the elimination of words of Bengali and Hindi origin.

In their persons, the Kheriahs are very dirty, seldom if ever washing themselves. Their features are decidedly of a low character not unlike the Bhúmi; but there seemed to me to be an absence of any strongly marked type in their faces or build, such as enables one to know a Sonthal, and even a Kúmi, at a glance. They undoubtedly belong, however, to the races who excited so much disgust on the part of the Hindus, when they first came into the country, and whom the author of the '*Annals of Rural Bengal*,' quoting from the Sanscrit, calls in language probably more appropriate when first written than now, "The black-skinned, human-sacrificing, flesh-eating, forest tribes."

Some conversation ensued in which Dr. D. B. Smith, Mr. Woodrow, Dr. Ewart, and Mr. Ball, took part.

The Natural History Secretary read the following :—

II. *Notes on rare and little known Malayan mammals and birds*, by Dr. Maingay.

1. *Gavæus Gaurus*.

The first specimen I bring to the notice of the Society is one of a frontlet of the Malayan bison, an animal well known to the Malays under the name of *Sladang* and described as of very large size, and more formidable when wounded than the tiger. It is found in the dense jungles around the base of Mount Ophir and the Kambou hills, and, no doubt, extends along the bases of the hilly ranges which form the axis of the Peninsula, as far as Tennasserim or Burmah.

It must not be confounded with the *Bos Sondaicus*, also found in similar localities and distinguished by the Malays under the local name of *Sapi* or *Sapiontan*. The *Sladang* is now very rarely found within the Malacca territory, and the animal from which the frontlet was taken, was the only one of which I have been able to obtain any record as having been killed within the British boundary for the last thirty years. It was a very old solitary male, and was wounded by a Malay, who immediately on firing ran away, and the body of the animal, in an advanced stage of decomposition, was found, some days after, at a distance from the place where it had been wounded. Not being able personally to visit the spot, I only succeeded in procuring the frontlet.

The measurements* in my specimen are as follows : Between the tips of the horns, 21 inches ; breadth of forehead along frontal ridge, $9\frac{1}{2}$ inches ; circumference of horn at base, $15\frac{1}{2}$ inches ; from base to tip round outer curve, $23\frac{1}{2}$ inches. I have also measured a pair of horns, at present in the possession of a gentleman at Malacca, which measure no less than $28\frac{1}{2}$ inches along the outer curve, with a longitudinal diameter of 7, and a transverse one of $3\frac{1}{2}$ inches, or exactly 2 to 1.

2. *Pelicanus Phillippensis*, apud Jerdon, Birds of India.

This is the only form of Pelican I have as yet met with in the Straits—I refer to the above species as described by Jerdon ; it generally appears in large flocks and at irregular intervals.

The following are the notes and measurements drawn up from two specimens, male and female, in my own collection.

* See Dr. Jerdon's Mammals of India, p. 303.

Irides clear pale brown, paler at the inner and outer edges, and surrounded for a fourth of an inch by an injected red sclerotic, which becomes white posteriorly. Bill from 12 to 13 inches long, measured along the central ridge of the upper mandible, which ridge is pale flesh colour, with the lateral expansions deeper in colour and marked with a series of leaden black or purplish subquadrate oblique maculae in either a single or, towards the base, a double row. Nail arcuate, dull yellow. Lower mandible greyish flesh colour, becoming orange towards the tip. Gular pouch, when lax, very pale slate colour, anteriorly with orange caruncles towards the base; when stretched, of a lurid flesh colour with well marked veins. Legs and feet dull slate colour, or bluish flesh colour. Claws whitish lead colour, paler towards their tips. Total length from tip of lower mandible to tip of tail, $4\frac{1}{2}$ feet. Wing 21 to $22\frac{1}{2}$ inches, with the 3rd and 4th quills longest, and the 2nd shorter than the 1st. Tarsus $3\frac{1}{8}$ to $3\frac{1}{2}$ inches. Middle toe, including claw, 5 to $5\frac{1}{2}$ inches. Inner toe, including claw, $5\frac{1}{2}$ inches. Outer toe 5 inches.

The species does not breed in any part of the Peninsula with which I am acquainted. It perches though rarely upon very lofty trees, and a similar habit has been noticed by Griffith in the Pelican of the Jheels of Eastern Bengal, but its usual roosting place is at sea. The Malays term it "*burong Jawa*," literally *bird of Java*. The marks on the bill occurred in every specimen which has passed under my observation.

3. *Limnaetus alboniger*, (Horsf. ?)*

[*Spizaetus cristatellus*, Jardine and Selby, in more advanced plumage than the very young individual represented in the ornithological illustration of those authors.]]†

This bird settles a point long in dispute, namely the identity of

* Horsfield (Cat. of Birds, I. p. 33) quotes ? *Nisaetus alboniger*, Blyth, as identical with *Spiz. caligatus*, and *Spiz. cristatellus*, Temm., as a distinct variety of the same, but I cannot find the reference to *Lim. alboniger*, Horsf.—NAT. HIST. SECRETARY.

† Jardine and Selby's (Ornith. II. p. 66) *Spizaetus cristatellus* is described from a specimen, said to have been shot by the Captain of a vessel about to enter the port of Aberdeen. The forehead of the specimen is whitish, the rest of the upper plumage brown, below and sides of neck white, tail greyish with 7 black bands. Jardine and Selby supposed this specimen to be Temminck's *Falco cristatellus*, in the adult state; this is however not the case, as may easily be seen from a comparison of the description of the last species in Dr. Jerdon's work.—NAT. HIST. SECRETARY.

Spizaetus cristatellus of Jardine and Selby above quoted. I possess in my own collection a single specimen of the latter exceedingly rare bird, which agrees with the description and figure in every respect. The specimen* I present to the Society, shows a more advanced stage of plumage, one exactly intermediate between *Spizaetus cristatellus* and *Limnaetus alboniger*, Horsf., if I understand the latter aright as a smaller form than *Kieneri*, but like it at once recognisable by the deep shining black of the back in old birds, and the rufous tinge of the breast and abdomen.

The species must be considered as very rare, even at Malacca, as I have only met with five specimens within a period of more than four years. Of other *Limnaeti* I may mention the following in my collection :—

Limnaetus niveus, always showing the fawn-coloured bands on the thighs, as noted by Jerdon.

Limnaetus alboniger, Blyth, (Asiatic Society, Journal, 12th July, 1845,) closely banded on the thighs and flanks with narrow transverse black bands, and with the back and crest black, the breast being marked with large black drops.

Limnaetus ? sp. of a dark hair brown colour on the back and with the belly, flanks and thighs showing narrow transverse brown bands. Both the last mentioned species are so rare, that I have met with only a single specimen of each.

4. *Hydrocissa n. sp.*

I met with this fine hornbill, for the first time since I have been in Malacca, only last December, when, singular to relate, it suddenly appeared in large flocks along the coast, and from the direction of the flight, I imagine the birds must have crossed over from Sumatra. They remained about a month, during which period several living examples passed through my hands. The Malays declared the birds had not been seen in Malacca for twenty years, and so far as my own four years' experience goes, I can corroborate their statements. They have

* This specimen is certainly a typical *Limnaetus Kieneri*, de Sparre, (Jerdon, Birds of India, I. p. 74). *Lim. cristatellus* of Temminck, is certainly quite distinct from this, and likewise quite distinct is *Lim. caligatus*, Raffl. (*Lim. alboniger*, Blyth), being easily distinguished by the large dark blotches to the white feathers of the breast, and by the white banded belly and thigh coverts. It would be very interesting to examine Dr. Maingay's specimen which he believes to agree in every respect with Jardine and Selby's description and figure.—NAT. HIST. SECRETARY.

since all disappeared as mysteriously as they came, and I have not met with any for the last three months. I am quite at a loss to account for so singular and unusual a migration, and the only plausible conjectures are: either that it was produced by a very unusually strong monsoon, or from a failure in the supply of fruits. So bold and fearless were the birds on their first arrival, that a few actually roosted, out of gun shot, however, on a very lofty and bushy *Pterocarpus* tree, within the precincts of the town.

The following descriptions were taken from living individuals of both sexes.

♂. Body and wings shining black, occiput with four inches of the dorsal surface of the neck black, the feathers slightly elongated. Throat, sides and a small ring at the root of the neck white, verging when in contact with the black neck patch into yellowish or even deep shining rufescent, though this last character is not always well marked. Tail black at the base, for about a third, the remaining two-thirds pale chrome-yellow. Skin round the orbits splendid clear blue. Gular pouch pale yellowish white. Irides a very clear dark brown approaching to crimson in certain lights. Bill in the upper mandible whitish at the tip, gradually becoming yellow towards the centre, and crimson for about one inch from its base. Casque crimson throughout, with four or more vertical shallow depressions anteriorly, its anterior edge inclined obliquely from behind forwards. Distal half of the lower mandible from the tip yellowish white, becoming clearer towards a very narrow black basal band, and marked with 4-8 linear curved grooves, extending from behind forwards. Feet dull lead colour; length of dried specimen, 2 feet 9½ inches; length of wing, 15½ inches; of tail, 10½ inches; of tarsus, 2½ inches. Bill at gape, 6¾ inches.

♀. Body black throughout, except the distal ⅓rds of tail which are of the same pale chesnut or creamy yellow as in the male. Bill throughout dirty yellow, becoming brownish or reddish brown for about half an inch from the base. Casque with a sharp anterior edge, inclined from behind slightly forwards, without the shallow grooves found in the male, the lower mandible also wanting them.

Flight undulating, rapid. Habits gregarious, in flocks of from 5 to 8 individuals.

Should the species be undescribed, I propose the specific name *migratorius* for it. I possess a male with two miniature *white* feathers in the tail, shorter in length and placed underneath the others.

Malacca, March 26th, 1868.

III. *Notes on the Lion of Aboo, by Assistant Surgeon GEORGE KING, M. B., Bengal Establishment.*

I have collected the following particulars from various English sportsmen in this part of Rajpootana and from native shikarees, all of whom have seen or shot lions, and as there is a wonderful harmony between the different accounts, I think they may be relied on.

Both to Rajpoot and Bheel shikarees in these parts, the lion is known, under the name of *Untia-bágh*: in Kattiawar, where it also occurs, it goes under the name of *Sáwach*. It is now beginning to get scarce in its old haunts in the jungle at the base of Mount Aboo and in the neighbouring plains, but whether from extermination or from migration, it is difficult exactly to say. I am inclined to think that the latter has a good deal to do with it. Having recently been stationed at Goonah in Central India, near which six or seven lions were shot in one season some years ago, I can bear testimony to the fact that the appearance of the animal there, was quite a surprise to both the European and Native sportsmen of the district, and that since that year not one has been seen. The news of the first, as observed at Goonah, was brought into the station by a native who described a large unknown tiger-like animal which had been seen to kill a kid near a neighbouring village. A party went out quite uncertain as to what large animal they could be going after, which had condescended to kill such small game as a kid. In the beat that followed, a lion was turned out and killed—a poor enfeebled specimen in very bad condition, and bearing the marks of numerous bites and tears,—which in the opinion of the shooters had probably been inflicted on him by the tigers into whose preserves he had intruded. Shortly after that, in other beats in the neighbourhood of the station, lions were turned out, and during the season, as just mentioned, six or seven were shot. One was seen to escape by swimming across a wide nullah. Lions have since been shot west of Goonah near Kotah, and in the jungle between the latter place and Gwalior, two

or three were shot so lately as the hot weather of 1867. During a march in December last from Goonah to Jodhpore through Kotah, Boondée and Harowtee, I made particular enquiries, as I went along, as to the occurrence of the lion, but could discover nothing to lead me to think that it is a common animal in the Kotah or Boondée jungles, nor even a permanent resident there; but perhaps the natives do not distinctly distinguish it from the tiger.

The lion is higher at the shoulder but shorter in the body than the tiger; in other words, comparing a lion and tiger of equal weight, the lion would be higher than the tiger, and the tiger larger than the lion. The head of the lion, even allowing for the deceptive appearance of size given by the mane of the male, is slightly larger than that of the tiger. A very fine large male lion shot near Aboo last year, measured, without stretching, forty-two inches in height at the shoulder, and ten feet and half an inch from the tip of the nose to the end of the tail. The hair of the mane was ten inches long.

The lion has never the sleek coat, nor rounded form of the tiger, but is invariably lean and lanky. His ribs can be distinguished under the rough skin, and as he walks, the movement of the shoulder-blades is very distinctly seen. The forelegs and all the feet are more massive than those of the tiger. The large size of the feet is particularly well marked in the young, the footprints of a lion cub of twenty-four months being nearly as large as those of a full grown tiger, but distinguishable from the latter by their greater lightness, as well as by their shape. The contrast in size between the footprints of adults is not so great, the lion's being but little larger than the tiger's, but distinguished from the latter by the rounder outline, as if the lion walked more on the tips of its toes than the tiger.

The colour of the lion differs with age, but at all ages the belly and legs are lighter than the back. The general tint is a sandy yellowish dun, much like that of the camel. In the young the colour is very light, and the legs and sides are particularly so, while the belly is almost white. On the light parts, there are very faint spots of a darker shade, in size about equal to a rupee.

The testicles are small but prominent, and are set high up just under the anus; the penis is like that of the tiger.

Unlike the tiger, the lion is rarely if ever seen in the hills at any

season. In the hot weather, lions frequent the banks of dry streams where the jungle is thick and scrubby, and during the day a very favourite cover near Aboo is in the dry sandy beds of streams where jaw jungle abounds. "Jaw" is the native name given indiscriminately to a species of *Tamarix*, and to *Trichaurus ericoides*, both of which grow freely, and form a dense cover from 4 to 6 feet high. If not disturbed, they often lie very near villages. They have been known to haunt, for months at a time, high retired bare open spots on the plains near Aboo where there are only a few patches of jungle sufficient to afford them cover from the sun. In the hot weather of 1867, four were shot near the village of Gole. They had lived there for three years, and during that time had done great havoc among the villagers' cattle. On the night of the arrival of the party that shot them, they killed four cows.

Lions are easier to beat out of their cover than tigers. In the matter of courage the two species are very much alike. They feed principally on wild pig, deer, and cattle, but are very fond of camels.

The lioness has never more than three, and usually only two cubs. At parturition she lies up separately like the tigress. The young remain with their mother for four or five years. They are said not to attain their full size until their sixth or seventh year.

Aboo, 30th May, 1868.

IV. Notes on a supposed new species of *Drymoipus Verreauxi*, by
Lieut.-Col. R. O. TYTLER.

Col. Tytler in a letter to Mr. A. Grote (dated Umballah, 2nd March, 1866,) forwards the description of a supposed new species of *Drymoipus*. He writes as follows:—

'In my fauna of Dacca which was published several years ago, I mentioned a new species of bird (*Megalurus*), I had found at that station, but no description of this bird as yet appeared. I am inclined to believe, it is more a *Drymoipus* than a member of that genus. The following is a short description of the species.

Length $6\frac{1}{2}$ inches, wing $2\frac{1}{2}$ inches, tail 3 inches, bill at top nearly $\frac{1}{2}$ an inch, tarsus 1 inch. Head, neck and back black with light brown streaks lower portion of back light chestnut brown, upper tail coverts black, each feather edged with chestnut brown, tail dark slate brown, each feather

darker in the centre, and closely marked with faint bars, and with a white terminal band; chin, cheeks, throat, breast, abdomen and under tail coverts white, rufous on the flanks and thighs, wings brown, with black centres to wing coverts, secondaries and tertiaries; quill feathers brown edged outwardly with light brown. Bill, feet and claws, light brown, eyes dark, under wing coverts albescent. There appears to be no difference in the colour of the sexes; if anything, the males are a little brighter.

I found this bird in long grass at Dacca, where it was far from being common, and I obtained very few.'—

Should the species prove to be new, Col. Tytler suggests naming it after his friend T. Verreaux of Paris; but Dr. Jerdon is of opinion that it is probably his *Graminicola Bengalensis* (See "Birds of India," Vol. II. p. 177). The changes in the plumage of the various species of SYLVIDÆ and allied families, are still very imperfectly recorded.

V. *Notes on new Gastropoda from the Southern Provinces of Ceylon*; by Messrs. G. and H. NEVILL. [Abstract.]

In this paper, the following new species have been described:—

1. *Oxynoe cineta*.
2. „ *delicatula*.
3. *Cylindrobulla sculpta*.
4. „ *pusilla*.
5. *Lobiger viridis*.
6. *Delphinula tubulosa*.
7. *Broderipia eximia*.

The five first named species belong to the interesting division OPISTHOBRANCHIA, and the two last ones to the SCUTIBRANCHIATA of the PROSOBRANCHIA.

The President then exhibited to the meeting one of the rude instruments, for approximately determining their latitude, used by the Captains of native coasting vessels, between Calcutta and Ceylon.

He said, "While visiting the coast in the early part of the present year, among other matters, I was interested in endeavouring to ascertain how it was that the commanders of native vessels, some of fair size, which are in the regular habit of passing from port to port along the

coast, succeeded in navigating these vessels. They are for the most part uneducated natives of the country. They are entirely unacquainted with such instruments as are generally in use for determining the position of a vessel at sea. They have no chronometers, and no sextants. Indeed being strictly coasting vessels, they do not leave sight of land, unless, as is not unfrequently the case, they are compelled by stress of weather to do so. On enquiry I found that they used a very ingenious but rudely simple means of obtaining approximately a knowledge of their latitude, when thus driven from shore. They do not care for any knowledge of their longitude, and never think of this.

The little contrivance which I now exhibit, consists simply of a small rectangular thin board or piece of teak-wood. The one I have measures $3\frac{1}{2}$ inches long by $2\frac{1}{2}$ inches broad, and is about $\frac{1}{16}$ inch thick. Through a small hole in the centre of this, determined by the intersection of the diagonals, a fine cord is passed, about the thickness of fine whipcord. The use of this little instrument depends upon the fact that the latitude of any place is roughly the same as the angle of elevation above the horizon of the polar star, and that any opaque object held vertically before the eye subtends an angle, which varies inversely as the distance of the object from the eye. If this distance be constant, and the size of the opaque object constant, the angle subtended by it must be constant also. Knowing this, the application of contrivance I hold in my hand is simple. The small rectangular board is held firmly in the left hand, while the cord from its centre (held in the right hand), is stretched from it to the eye, where the fingers of the right hand are held. As this cord, or the distance from the eye to the small rectangular board, is increased or diminished, so is the angle subtended by the opaque board, lessened or enlarged. Well, say the Captain of one of these coasters is anchored at Vizagapatam, on the coast, he takes advantage of a clear night, and sitting on the deck of his vessel, he carefully brings the line of the lower edge of this small rectangular board to coincide with the line of the horizon, or sea line, and moves the board slowly back and forward, until he brings the line of the upper edge to correspond with or to intersect the polar star. Carefully marking the length of the cord passing from his eye to the board, when this is the case, he puts a knot on the cord at that point.

If this be carefully done, he knows that whether near the coast or far from it, if he be in such a position that the horizontal line and the polar star coincide with the two edges of the board, while that board is held vertically before his eye at the distance indicated by the knot, that he must be in, or close to, the same parallel of latitude as the port at which the first observation was made. It matters not to him whether this be, in our mode of recording the latitude, 10° , or 15° , or 20° —all he cares to know, in his rude navigation, is that he is about the same parallel, and that if his destination be north or south of that port, he has only to steer accordingly.

Similar observations being repeated at other ports, marks or knots corresponding to these are placed at the proper distances on the cord. These lengths have been determined now by innumerable separate observations, and these substitutes for sextants can be, I am told, purchased with the knots or marks all ready. Careful men test these again, quite as a European Captain would carefully ascertain the Index error of his sextant for himself, however admirably constructed it might be.

I am told that a careful man will determine his latitude, as referred to the fixed points or ports on the coast, within 10 to 15 miles, by this very rude substitute for a sextant.

I am indebted to the kindness of Stuart Hall, Esq., of the firm of Hall and Syme, Coconada, for the possession of the one I now exhibit. The names of the several ports along the coast are written, or rather incised, on the board in Telugu characters, corresponding in order and number to the knots and marks on the cord. These are 14 in all: the more important, Godavery, Madras, Negapatam, are marked on the end by little tufts of coloured cotton thread, red, blue, white. The specimen before the meeting had been in actual use for some years."

The President also exhibited to the meeting a very interesting and valuable addition to the collection of Meteorites, in the Geological Museum. This was a beautiful specimen of the fall which occurred near Pultush, about 35 English miles from Warsaw, on the 30th of January in the present year. Several stones fell—the largest is in possession of a private party, the second largest went to the Imperial Mineral collection at St. Petersburg, and the third

largest was secured for the Imperial Mineral Cabinet at Vienna. This had been cut for examination, and Dr. M. Hornes had, with his wonted liberality, sent to Mr. Oldham the specimen now exhibited, the second in size of the three pieces into which the whole was divided. It weighs 6 oz. 398 grs. The stone sent to Vienna was perfect, that is, it was covered on all sides with a distinct crust tolerably uniform, and about $\frac{1}{80}$ th of an inch in thickness. The stone, as seen by the fresh fracture and polished surface, belongs to the same general group as several other well known falls. These are all grey, more or less dark, coloured brown locally, with more or less globular portions, distinguished from the rest of the mass by a nearly black colour with much finely divided Iron, a little Pyrites, and probably Troilite. This stone (Paltush) is very similar to that which fell at Gross Divina, Hungary, on July 24th, 1837. The specific gravity is 3.660.

The stone belongs to the third class, *sporadosidères*, and to the second subdivision of that class, *oligosidères*, of Profr. Daubrée's classification—

The receipt of the following communications was announced :—

1. *The History of Burma*, by Col. Sir A. PHAYRE.

Col. Phayre's paper is a continuation of that published in the 32nd volume of the Journal of the Society. In that paper, the author traced the history of the Burma race from the earliest times to the arrival of the two sons of the king of Tagrung at the site of the present town of Prome. The national chronicles from that time proceed with the history of the monarchy established at Tha ré Khél ta rá, to the east of Prome. In the present paper, the author condenses into a brief narrative the principal events of that monarchy and of the succeeding dynasties of Burma kings, which reigned at Pagán, on the Irawaddy river, about 180 miles above Prome.

2. On some new species of *Gastropoda* from the Southern Provinces of Ceylon, by Messrs G. and H. Nevill.

3. *Authors of Armenian Grammars, from the earliest stages of Armenian Literature up to the present day*, by J. AYDALL, Esq.

LIBRARY.

The following additions were made to the Library since the meeting held in July last—

PRESENTATIONS.

* * * The names of Donors in capitals.

Bráhma dharma.—THE CALCUTTA BRAHMA SAMÁJA.

Bráhma dharma, with commentaries.—THE SAME.

Bráhma dharma, in Nágarí characters.—THE SAME.

Bráhma dharma Vyákhyána.—THE SAME.

Bráhma dharma mata o Visvása.—THE SAME.

Dharma charchá.—THE SAME.

Dharma síkshá.—THE SAME.

Prátyahika Bráhmopásaná.—THE SAME.

Brahma stotra.—THE SAME.

Prárthaná.—THE SAME.

Átmatattva vidyá.—THE SAME.

Panttalika pravodha.—THE SAME.

Tattva vidyá, part I.—THE SAME.

Anushthána paddhati.—THE SAME.

Pravachana Sangraha.—THE SAME.

Mághotsava.—THE SAME.

Bráhma Samája Vaktrítá, 3 Nos.—THE SAME.

Vedantic Doctrines vindicated.—THE SAME.

Selections from several books of the Vedanta by Raja Ráma-mohana Ráya.—THE SAME.

Several Tracts on Hindu Theism.—THE SAME.

The Signs of the Times.—THE SAME.

The Theist's Prayer-Book.—THE SAME.

The Doctrine of The Christian Resurrection.—THE SAME.

Proceedings of the Royal Society.—THE ROYAL SOCIETY OF LONDON.

Journal Asiatique, No. 40.—THE ASIATIC SOCIETY OF PARIS.

Bulletin de la Societé de Géographie; Mai, 1868.—THE GEOGRAPHICAL SOCIETY OF PARIS.

Proceedings of the Academy of Natural Sciences of Philadelphia for 1867.—THE ACADEMY.

Journal of the Academy of Natural Sciences of Philadelphia, Vol. VI. part II.—THE SAME.

Les Manuscrits Lampongs en possession de M. le Baron Sloet van der Beele, publiés par H. N. van der Tuuk.—THE AUTHOR.

Records of the Geological Survey of India, Vol. I. part I.—THE SUPDT. GEOL. SURV. OF INDIA.

Another Copy.—THE GOVT. OF BENGAL.

Palæontologia Indica, Vol. V. part 6.—THE SAME.

Annual Report of the Lahore Lunatic Asylum for the year 1867.—THE SAME.

Report on the Police of the town of Calcutta and its suburbs for 1867.—THE SAME.

Note on the importance of the Spectroscopical Examination of the vicinity of the Sun, when totally eclipsed, for the determination of the nature and extent of its luminous atmosphere, and on the partial identity of that atmosphere with the Zodiacal light. By Prof. E. W. Brayley.—THE AUTHOR.

A lecture on the life of Rámadulála De, by Girisachandra Ghosa.—THE AUTHOR.

The Calcutta Journal of Medicine, Vol. I. No. 6.—THE EDITOR.

Padmadúta Kavyam by Siddhanáta Vidyávágisá :—COL. J. C. HAUGHTON.

Addresses delivered at the Hitoishini Samája of Cutch Vehara.—THE SAME.

Prasannarághava Náta, edited by Govindadeva Sastri.—THE EDITOR.

Grammaire Polyglotte, par Le P. Minas Médiçi.—J. AVDALL, Esq.
PURCHASED.

Reise Seiner Majestät Fregatte Novara um die Erde, Botanischer Theil, Band I. Algen.

Revue et Magazin de Zoologie, No. 4, 1868.

The Annals and Magazine of Natural History, No. 6, 1868.

Journal des Savants, Avril, 1868.

Comptes Rendus, Nos. 16—21, 1868.

Revue des Deux Mondes, 15th Mai, 1st June, 1868.

Revue Archeologique, V. 1868.

Revue Linguistique, Avril, 1868.

Les Quatrains de Khéyam, traduits du Persan par J. B. Nicolas.

Visible Speech, the Science of Universal Alphabetics, by A. M. Bell.

EXCHANGE.

Athenæum, for May, 1868.



Scale 1 inch = 2 inches
Pottery and Iron remains found in Cromlech,
COORRG.



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,

FOR SEPTEMBER, 1868.

A Meeting of the Society was held on Wednesday, the 2nd instant, at 9 o'clock P. M.

T. Oldham, Esq., LL. D., President, in the chair.

The minutes of the last meeting were read and confirmed.

The following presentations have been received since the last meeting.

1. From Dr. G. King—

A skeleton of a lion.

2. From the Minister of Foreign Affairs, Paris—

A copy of Collection Orientale, Le Livre des Rois, Vol. VI.

3. From Maulavi Muhammad Zuhurulhaq—

A copy of the Diwán-i-Sultán.

4. From the author—

Two copies of a pamphlet, entitled *Statistics of Longevity, No. II.*, by Captain T. C. Anderson, Garrison Barrack-Master, Fort William.

The following gentlemen duly proposed and seconded at the last meeting were balloted for, and elected as Ordinary members :—

Baron von Ernsthausen.

R. M. Adam, Esq.

E. Ch. van Cutsem, Esq.

R. V. Stoney, Esq.

C. Lazarus, Esq.

The following gentlemen are candidates for ballot at the October meeting :—

W. Eddowes, Esq., M. D., Assistant Surgeon, Erinipura Irregular Force.

Proposed by the President, seconded by the Secretary.
Dr. S. M. Shireore, Civil Surgeon, Twenty-four Pergunnahs.

Proposed by Dr. Partridge, seconded by the Secretary.

In accordance with the notice given at the last meeting, A. Grote, Esq., was balloted for and elected an Honorary Member of the Society.

The election of H. Blochmann, Esq., as General Secretary of the Society, reported at the last meeting, was confirmed.

The President said that while the ballot was proceeding, he would submit for the inspection of the Society, a magnificent specimen of a Meteorite, which he had recently received. This was a portion of the known fall which took place at Klein Menow, near Fürstenberg in Mecklenburg-Strelitz, on the 7th October 1861, in the day time, about half-past one o'clock. The stone, as it fell, was tolerably perfect, being coated in most places with the usual vitreous crust. This, in the present fall, was much more rough and irregular than was usual. The stone was purchased entire by Baron Reichenbach, who then was forming a fine collection of these objects, and it has since then remained with him. He declined to cut it, so as to allow other collections to have portions. More recently he has been anxious to dispose of it, and about the beginning of the present year, it passed into the hands of Wm. Nevill, Esq., Godalming, whose collection of Meteorites is known to all interested in these enquiries, as the finest private collection now existing. Indeed his series will rank fourth or fifth among all collections, either public or private. To the kindness of Mr. Nevill, he was indebted for this splendid specimen, which is about one-third of the whole mass. As yet he had only been able to examine the polished surface of the mass where cut—and it is not easy to determine the exact structure of the fall in this way. The members would see the appearance it presents. Round sub-angular and occasionally globular-looking masses of a darker colour are irregularly scattered though the mass of the block, which consists of a kind of net work of iron. The mass is magnetic.

From Mr. Nevill, he had also received a specimen of the rarest of all known meteorites hitherto only known to be represented in his own collection and in that of the British Museum. The only known fragment originally belonged to the Lettsom collection which passed into Mr. Nevill's hands, and was divided with the British Museum.

The fall he spoke of is that which took place on the 17th May, 1830, at Perth in Scotland.

The President also said, he had brought to the meeting, thinking it might interest some of the members, a series of beautifully executed models of the most celebrated large diamonds, known to exist. These models are very well executed, and give an excellent idea, both of the size, brilliancy, colour, &c., of these valuable stones.

The President then said that, subsequently to the last meeting of Council, he had received communications on a subject which was of great local as well as general interest, and which had been the source of a good deal of intellectual excitement recently, he alluded to the recent total Eclipse of the Sun, which, as the members were aware, had occurred under conditions as to the relative positions of the Sun, Moon and Earth, nearly as favourable as could possibly be. An unusually protracted continuance of the totality of the Eclipse was the result, and consequently great preparations had been made for the careful observation and record of the facts. Coming in the middle of the Monsoon there was, of course, a very great probability that the sky would be so covered with clouds, that nothing would be seen, as was very much the case in Calcutta. But there were chances in favour of success, and these have been fully seized. The matter was one of such immediate interest, that he had exercised the authority granted to him and, anticipating the consent of the Society, he had arranged that these papers should take precedence of the papers announced for the meeting. If time permitted after the reading of the communications on the Eclipse, they could proceed to the other papers. Col. Gastrell would read a paper by Captain Tanner, and then he would ask Major Macdonald to read his notes.

Remarks on the Total Eclipse of the eighteenth of August, 1868, as observed at Beejapoor, situated in E. Long. 75° 50' 15" Lat. 16° 49' 35" N. and 16 miles north of the central line of eclipse.—BY CAPTAIN TANNER.

The morning of the 18th August broke dark and cloudy at Beejapoor, and the high wind, which had prevailed for several days previously, had in no way abated.

We took up our position on a lofty tower some 70 feet high, one of the numerous ruins of this far famed ruined city. From this altitude, we could obtain a commanding view of the whole surrounding country, a position most favourable for observation of the general phenomena of the eclipse. I selected a spot near the top of the exterior spiral staircase of the tower, protected entirely from the wind, and where I could make my observations in a comfortable and easy attitude.

Our party was composed of Captain Haig, R. E., G. T. S.; Professor Kern Luximun, M. A. of the Dekhan College, Mr. Hunter, C. S.; Dr. Kielhorn of the Dekhan College, and myself.

Captain Haig was furnished with one of the Royal Society's Spectroscopes. He had fitted this instrument to one of my 6 inch transit Theodolites, in order to command greater magnifying power than he had with the telescope of his spectroscope. Professor Kern Luximun had a $2\frac{1}{2}$ in. telescope of 30 in. focal length, which was equatorially mounted. His instrument was furnished with an eye-piece of 60 power, possessing a scale, or micrometer with which he intended measuring the altitudes of the red protuberances.

The high wind, however, unfortunately overturned the instrument, and so much disarranged it, that he had to substitute a power of 75 instead.

I had a 10-inch Theodolite possessing a remarkably good telescope of $1\frac{1}{2}$ in. aperture, and 18 inches focal length; with an eye-piece of 46 power. I had intended observing with a telescope of 3 in. aperture, but it did not arrive from Nimar in time before I left Poonah.

Kern Luximun had previously determined the error of our chronometer, which was verified by an independent observation by Captain Haig and myself, in the afternoon, and we thought we were well prepared for the coming event ere the 1st contact took place. By some mistake in applying the error of the chronometer, or from some other cause, the first contact took place before we expected it, and I was the only one of the party ready to note the event. Owing, however, to clouds, I was prevented observing the exact instant at which it occurred, and my observation must have been some 40 seconds late. I made a sketch of the segment of the sun, obscured by the moon at the instant of my observation, and by applying it to a diagram previously constructed by Kern Luximun for this purpose,

estimated that the 1st contact had taken place about 50 seconds before my observation. Afterwards, by comparing the segment with a similar one at the time of last contact, I estimated the time to be about 35 seconds, we therefore adopted the mean of these estimated times as the instant of first contact.

The sky now remained for a considerable time over-cast with cirro-cumuli and fast flying nimbi, but we occasionally obtained views of the progress of the moon across the sun.

The light except near the time of totality waned imperceptibly, and when even as much as $\frac{3}{8}$ ths of the sun's disc was hidden, there was hardly any diminution in its intensity. During the last few seconds before totality, the light gave way very suddenly. I saw darkness approaching rapidly from the west, where the gloom appeared like a vast black thunderstorm. It was on us in a few seconds; clouds had hidden the sun just previous to his total obscuration, and from their density and extent, we almost gave up hope of seeing any of the interesting phenomena we had come so far to observe. Kern Luximun, however, noted approximately the time of commencement of the total phase. I myself was unwilling to believe that the totality had actually commenced, so incomplete was the darkness. At this time and throughout the total phase, it was remarkable that we could see to read and write in pencil, could take observations and read the second's hands of our watches with great ease. The light in the eastern sky was noted by me to be fading at 9. 3. 20 M. T., and had completely disappeared in 25 seconds. We were now enveloped in a dense leaden gloom which overspread the whole expanse of country visible to us. There was nothing remarkable about the colour of the sky or clouds, the darkness was that of ordinary twilight early on a dull grey morning.

Shortly after the time of greatest obscuration, light began to break in the western sky (a small patch free of cloud being visible), and presently we caught a view of the eclipse through the upper thin stratum of cirro-cumuli. So bright was the corona immediately around the moon's limb, that for a moment I was under the impression that the eclipse instead of being total was only annular. Its light died away completely at a distance of half the moon's diameter. It appeared to me and to Professor Kern Luximun to be quite regular

and evenly, and softly shaded off all round. But Captain Haig fancied that he detected some slightly marked radiating lines in its structure. The eclipse being now quite clear, we commenced observations with our different instruments. At my first view of the moon through my telescope, three red prominences met my gaze. The one marked *a*, Plate IV., at my first hurried glance appeared to be sharply defined, pointed, and of homogeneous composition. I immediately made a sketch of it. The double flat broad protuberance marked *b*, appeared as depicted on the sketch to be composed of well defined hard streaks or lines slightly radiating. The Professor afterwards aptly likened them to the fingers of the hands slightly separated: each part of this double protuberance being composed of perhaps 6 to 10 such fingers or lines. I then sketched them and casting my eye round the moon's limb again, to see that no others had escaped notice, returned to examine the flame *a* more minutely.

I found it to be composed of streaks of flame-coloured matter, not lying parallel or nearly so, to each other as in spot *b*, but overlapping and somewhat twisted one upon another, precisely as the large flame of a burning mass of inflammable matter is composed of smaller tongues of fire: the streaks being, however, rather finer in proportion than the tongues of fire to which I have likened them. They were of a darker colour than the groundwork of the protuberance, and were more of a dark blood-red than I have shewn it in the sketch. The edge of the protuberance was ragged, being composed of the ends of the streaks just described. I now made a larger and more detailed sketch of this protuberance, and again returned to the telescope, when I found that another small red spot had in the meantime appeared. I marked it at *c*₂, and Professor Kern Luximun at *c*₁. After noting its position, I observed the general appearance of the eclipse, when in a few seconds the sun burst forth from behind the moon. The sudden contrast between the deep twilight of the total phase and the sunshine imparted even by so small a portion of the sun's disc as was at first visible, made it appear to us all that the light of day was complete.

At the first appearance of the limb of the sun, the red prominences all disappeared from my view, but Kern Luximun noticed them two minutes after that event. We now, aided by our rough original sketches, and our memory, each made another diagram, showing the position, shape, and structure of the protuberances. The manner in

which these representations of the eclipse bore comparison with each other elicited an exclamation of surprise from Dr. Kielhorn. The comparison shewed as follows :—

Protuberance *a* was shewn by the Professor straighter and not so pointed as by me. The streaks composing its body, the angle at which it met the moon's limb, and its height and position corresponded very well. The position, structure, and height of the double spot *b*, the same in both sketches.

The spot marked by the Professor at *c*₁ was noted by me at *c*₂. I am inclined to give way to the position he has assigned to this prominence, as I believe that in my hurry I may have marked it in an inverted position with regard to the double spot *b*; it may be remarked that we have both placed it at the same distance from *b*.

Captain Haig after just glancing at the sun through his telescope, and satisfying himself as to the existence of red flames, proceeded at once to examine them, and the corona with his spectroscope. The latter though most markedly visible to the naked eye gave but a faint continuous spectrum, whereas the red flames although totally invisible to unaided sight, shone out brilliantly and conspicuously across the dark disc of the moon.

Captain Haig's report to Colonel Walker fully describes his observations, which he hopes will corroborate those of other observers who have been furnished with complete apparatus for analyzing the constitution of the corona and red flames.

Kern Luximon and I are almost unfortunate in being perhaps the first observers to notice the streaky lined structure of the red protuberances.

I would therefore offer the following suggestions as to the probable or perhaps possible reason for our having noticed them.

When the sun is ordinarily observed on a bright warm day, the tremulous motion of the atmosphere so interferes with magnified views of sun-spots, that the minute markings of their structure are almost if not quite lost and obliterated. Now we observed through a single gap in the clouds. The earth and atmosphere had not been warmed at all by the sun's rays that morning, and we therefore saw the sun through a perfectly steady and homogeneous atmosphere, undisturbed and unbroken by heated tremulous vapour; the streaks and lines composing the red protuberances were therefore seen by us distinct from

each other. In the double flame *b*, even the most careless observer could not fail to notice the radiating lines or streaks, and it only required ordinary care to detect the same phenomenon in *a*, the lines composing this, as before remarked, being finer and more minute than in *b*.

The red protuberance *c*, shewed no markings.

We judged from our sketches and from estimation that *a* attained about 2' of altitude. Professor Spruer of the German astronomical party who obtained a glimpse of about 4 seconds' duration of the total phase, judged this protuberance to be about 3' high. He had so short a time for observation that he mistook *b* for a single point.

I had an opportunity of comparing our small instruments with the magnificent ones furnished by the Prussian Government to their observers who unfortunately selected a spot some 15 miles from Beejapoor, whence the sun was invisible almost throughout the eclipse. My telescope bore the tests it was put to in a most satisfactory manner; its definition is surprising. On the morning of the eclipse, the sun spots as seen through my telescope, could have been faithfully depicted with the point of a fine etching pen; with the other telescopes I examined, the same spots would have to be drawn with a camel's hair pencil and shaded with indian ink. With the 46 power eye-piece Saturn's ring, one of his bands, and one of his satellites, are visible; the faculae on the sun, especially in the neighbourhood of spots, being clearly perceptible.

The following table shews our time observations :—

| | Computed by Prof. Pogson. | Observed by us. | Diff. S. | REMARKS. |
|-----------------------|------------------------------|--------------------|-------------|---|
| 1st Contact, | 7 50 54 | 7 50 25 | 29 | Estimated by Captain Tanner's Observations. |
| Totality commenced, | 9 2 9 | 9 1 49 | 20 | Estimated by Kern Luxi- mun. |
| Totality ended, | 9 7 21 | 9 6 59 | 22 | Noted by Captain Tanner and Kern Luximun. |
| Last contact, | 10 28 44 | 10 28 14 | 30 | Noted by Capt. Haig and 2 seconds later by Capt. Tanner.* |

* Captain Tanner's time was noted when a high, well defined mountain on the moon's limb left the sun.

Captain Haig's observation was made when this mountain was distinctly projected on the sun's disc.

The 1st contact was made very near the apex, and the last contact at a point 165 degrees from the apex counting round by the right. The computed places were 1st contact, 1° to right of apex, and last contact 173° from apex round by the right. We have not yet accounted for the discrepancies either of time or position.

Record of the Eclipse of the 18th August 1868, as seen from a hill in the vicinity of "Bezwarra" on the "Kistna" river, at latitude, $16^{\circ} 21' 10''$ North, and longitude $80^{\circ} 43' 20''$ East.—By MAJOR J. MACDONALD.

The place of observation was well chosen. It commanded a view of the valley of the Kistna, which stream was then in flood, and covered the ground south-east of my station with water; this bright surface of several square miles was admirably suited to show the gloom of the shadow: to the west and north west the range of the "Condapillay" hills varying in height from 1000 to 1500 feet higher than my station, and distant about 12 to 15 miles, furnished a contrast in colour and outline, exactly required for the purpose of noting the difference of light on the landscape. North and east, the whole champaign was a field of springing rice, broken by small hills and dotted with groves. Thus I had a landscape adapted for every purpose I required.

That I might make a fair comparison with the degree of light during the period of totality with that of an ordinary twilight when the sun is under the horizon, I took up my post nearly an hour before sunrise, and carefully noted the prominent objects of the landscape, as they first appeared in the dawning light. These were numerous and varied, from distances of miles and thousands of yards to human features placed at distances of 30 to 10 yards from my station.

To sketch the appearance of the corona, I prepared a diagram showing the deep shadow of the moon; and for facility of comparison, I drew circles round the disc increasing from $\frac{1}{8}$ of the radius to $\frac{1}{4}$. Nine of these circles gave a space round the moon which I judged would be sufficient to show all the brightness of the corona.

Thus prepared, I took my station. I noted the temperature of a thermometer attached to the tripod of my telescope to be 96° in the sun, immediately before the commencement of the eclipse; and at 8-18 A. M., the moon's shadow crossed the light of the sun, and the eclipse

commenced. I supposed myself to be about 9 minutes north of the central line of eclipse, and calculated that I should have a period of totality equal to 5 minutes and a half.

I observed with a 120-power telescope by Dollond, through a double glass of red and brown. The power was sufficient to show the broken outline of the moon, and as totality approached, the bright lights on the high grounds in the moon were shown most beautifully on the illuminated edge of the moon's disc.

Interested by the account given in Major Tennant's paper as read by him before the Asiatic Society at Calcutta, regarding the observations made at Ragusa in March 1867, by Ensign Kiha of the Austrian navy through a cobalt blue glass, I tried to observe through a glass of bright Prussian blue; but when only ten minutes from totality, I found it impossible to look at the sun through such a pale colour. So it is inexplicable to me, how Ensign Kiha was able to look at the sun through a brighter colour under less favorable circumstances. During totality, I looked for 8 minutes through the blue glass, and thought the appearance of the corona and flames to be then infinitely more beautiful than when seen through the darker glass, or by the naked eye.

During totality, the mercury of the thermometer in the open air and attached to the telescope tripod fell to 88.5 degrees being a fall of twelve and a half degrees. A minimum thermometer, in the verandah of Colonel Winscomb's house, fell to 82°. Unfortunately the reading of the maximum thermometer placed in the same situation, could not be depended upon.

There was no appreciable change on an Aneroid Barometer during the progress of the eclipse.

With reference to my remarks on the light during totality, I will record a few of the facts from which I made my comparison.

First, I noticed hills left and right of the flooded valley of the Kistna at distances of three and four miles. They were discernible during the totality.

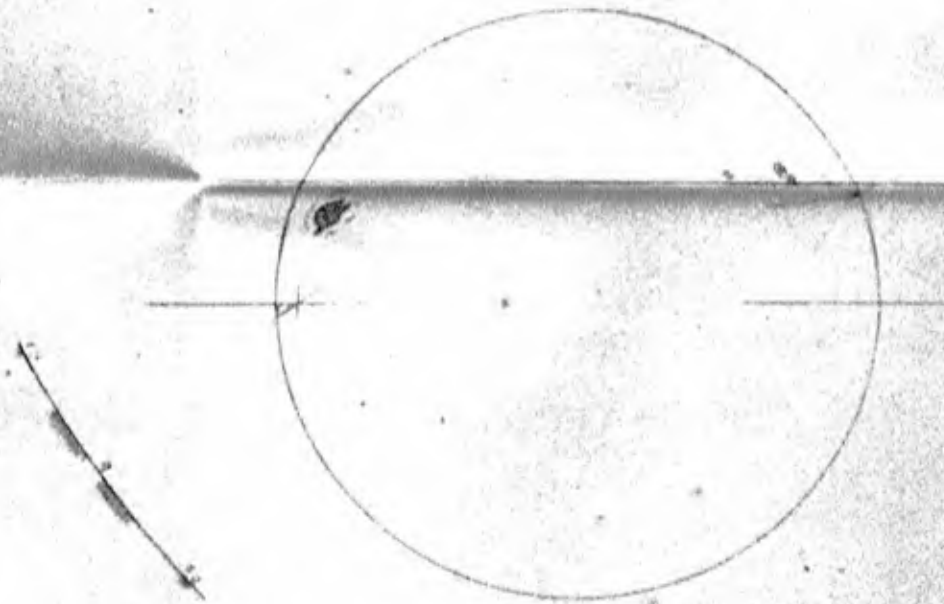
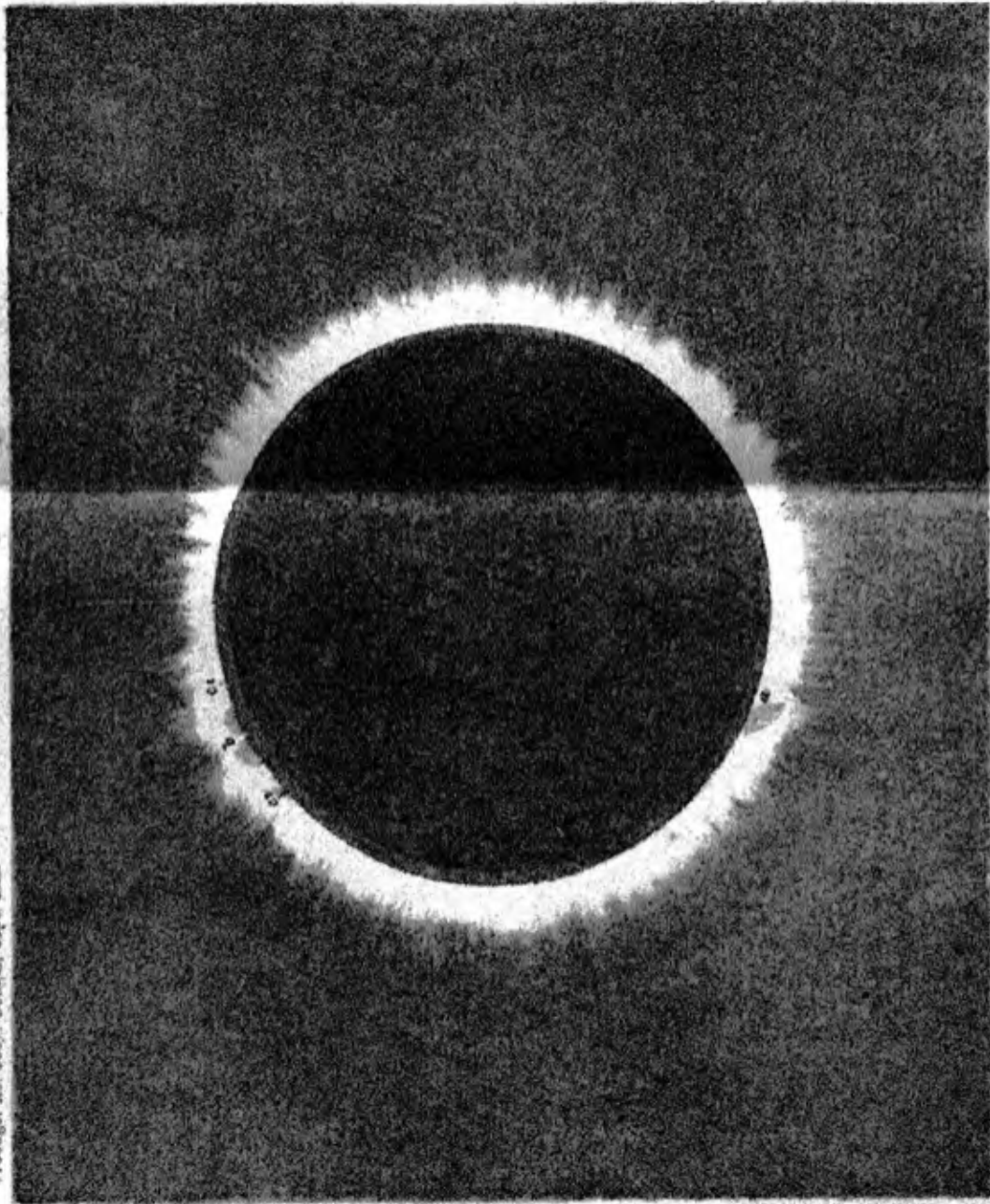
Secondly, A house painted with a light colour, overlooking the town of Bezwarra, was situated on the side of a hill distant about 2000 yards from my station. Two or three hundred feet higher up, on the face of the same hills, I noticed a precipice of dark rock. Both the light and dark objects remained visible.

DIRECT IMAGE.

Appearance of Total Solar Eclipse 18th August 1932 about 30 seconds before end of totality as seen in a telescope with $\times 150$ power.

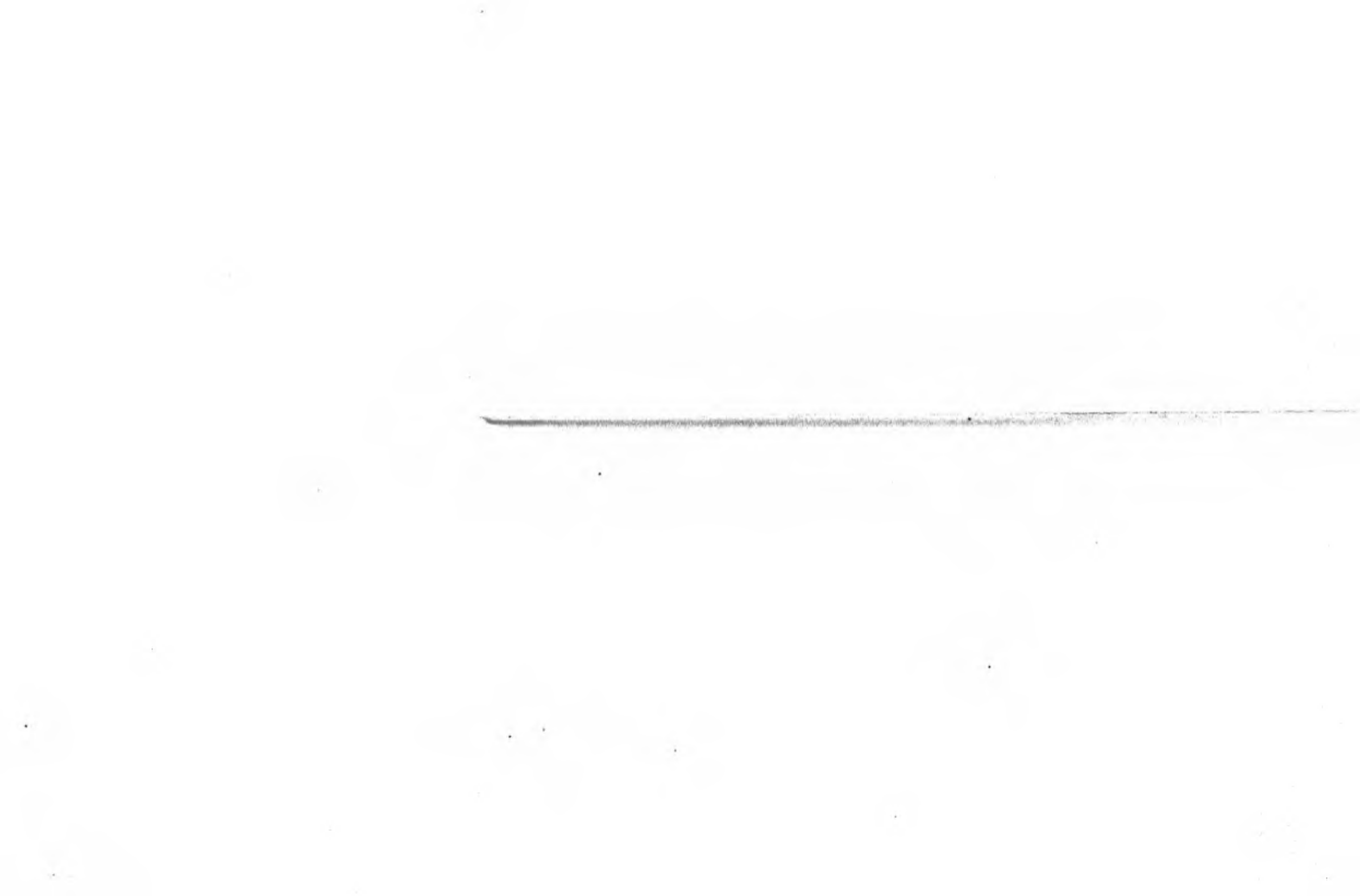
Proclips. As. Socy. Bristol, Sept. 1932.

Photo IV.



- a Prominence showing streaky structure with rounded edge.
- b Double prominence showing lines and streaks more decidedly.
- c Small prominence which appeared about 20 seconds before the end of total phase showing no lines or streaks, noted by Keri Luximon.
- d The same prominence as noted by me.
- e About 2' 10" high.
- f About $\frac{1}{2}$ of a.
- g Perhaps 20"

Sun spots immediately after
ECLIPSE.
Distances from sun's limb measured with Micrometer
plates etc. nearly on opposite parts of limb to sun spots.
H. O. B. Tanner



Thirdly, I could distinctly see the roofs and walls of all the bungalows in the plain underneath me; also the general outline of the town, the line of the Canal, and as a matter of course, the river beyond the town was clearly discernible; the landscape in this direction varied in objects from 500 to 2500 yards.

Fourthly, Before the eclipse, I noted the colours of dark and white cattle grazing in a field immediately below my station and distant about 600 feet in a straight line from that spot. During totality, I could still recognise the difference in colour, and also distinguish a large white stone I had remarked in a field about 100 yards beyond the cattle.

Fifthly, In the middle of the totality, I could recognise the features of human beings up to 20 yards. I believe I could have recognised the features of a white person as far as 30 yards off.

Only two stars, Regulus and Sirius, were visible. The planets Mars and Venus could also be seen. Hazy clouds everywhere, except when dispelled by the sun's rays, prevented numerous stars being seen, which ought to have been visible in the gloom. Still, I must record my opinion, that the accounts I have read of the great darkness on the earth during the progress of a total eclipse, are greatly exaggerated, or at all events are not applicable to eclipses under low latitudes, when the great height of the sun throws such a mass of light to be reflected from the uneclipsed portion of the heaven.

In this case I carefully noticed all the facts I intended to report upon, and did not lose my presence of mind, when recording them in turn. The eclipse, occurring so early in the morning, prevented any appearance of those peculiarities amongst birds and beasts which have been so descanted upon, but had it occurred in the afternoon, I can quite believe in the truth of such facts as the birds roosting, and animals moving towards their folds.

As a spectacle, nothing can be imagined which is equal or similar to a total eclipse of the sun. The grandeur of the great shadow, is so immediately relieved by the brilliant glory of the surrounding halo—that all sense of awe is lost in admiration of a sight so astonishingly beautiful. The moment of returning light was especially wonderful in its effect and appearance, instantly illuminating the whole landscape with a brilliant pale blue colour. In the 3rd and 4th

quadrants, the length of rays from the corona were far larger than from the 2nd and 3rd; the greatest flaming projections rose in those quadrants, so it appears evident that the great mass of light is in the sun's atmosphere, and it is difficult to conceive that it can be caused by anything except simple combustion, such as we witness in our own fires. (The known motion of the sun through space indicates that it thus obtains its constant supply of oxygen, and its great rate of progression, rotation and revolution round its orbit of momenta may be accepted as a sufficient exciting cause of ignition and light in itself.) The brightness of the corona appears to be due to the dispersion of the sun's rays in our atmosphere. It is to be hoped that the experiments by the properly supplied expedition at Guntoor will determine this point to the satisfaction of those who are qualified to weigh the facts.

In my sketch (Plate 5) I think that I have made the great flames far smaller than they appeared in comparison with the moon. The great flame in the fourth quadrant, when viewed through the telescope, looked at least a third of the moon's diameter. The lights in the 3rd quadrant were not visible after totality; they were golden coloured and were detached from the moon's surface. The outline of the moon was broken round all the edges of its surface.

August 18th, 1868, on board my boat in the Kistna Canal.

Dr. Partridge then exhibited the drawings of the eclipse, as seen from on board the French steamer "*La Bourdonnais*." The drawings had been made by the Doctor and the Pilot of the steamer.

A conversation took place in which several members joined. Dr. Partridge drew attention to the admirable observation and description of the eclipse observed in 1860, in Spain by W. De La Rue, and published in the *Philosophical Transactions of the Royal Society* for 1862, and referred to several points in which the present observations confirmed these earlier ones.

* * * * *

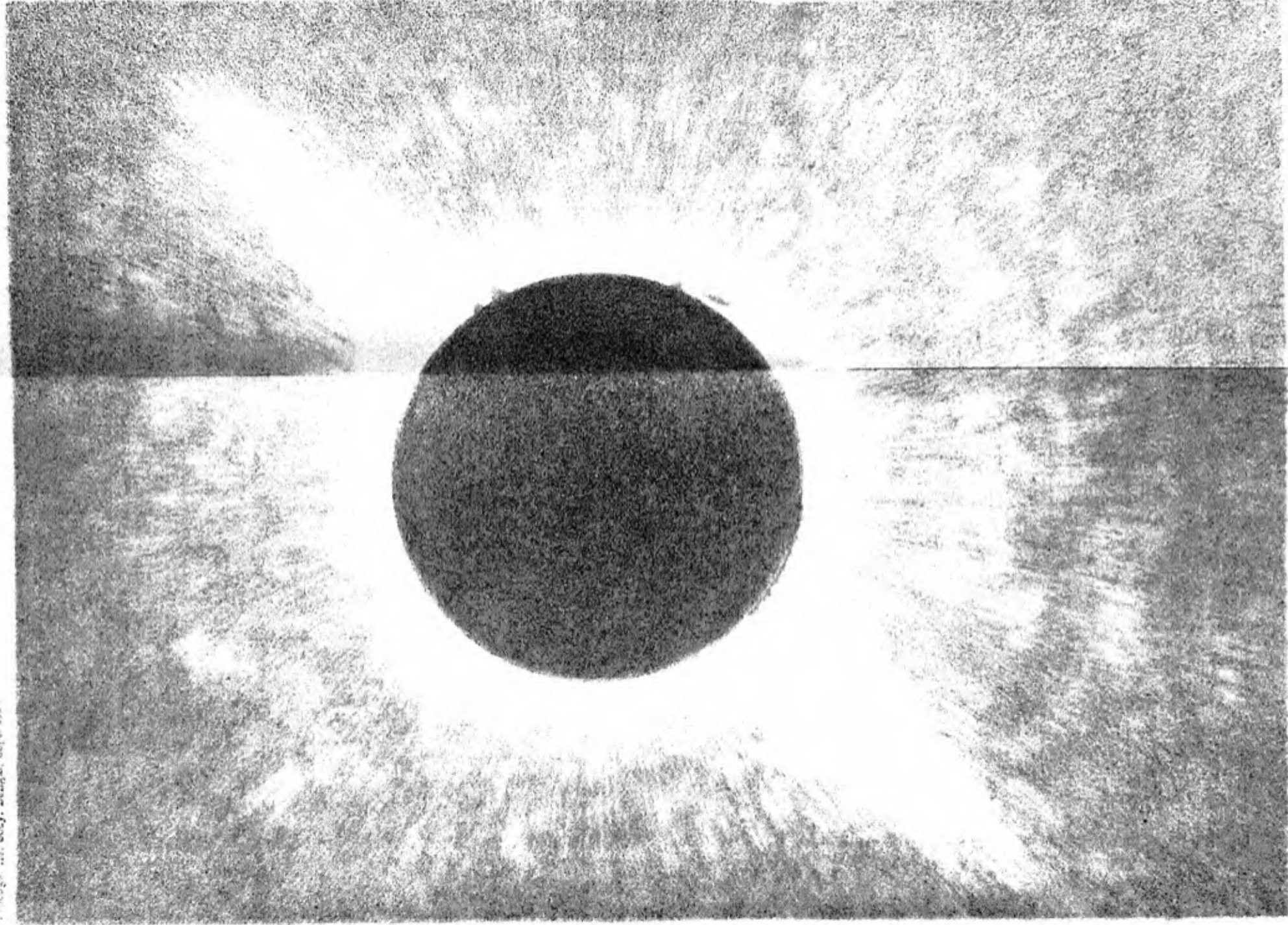
The President said they had also received from some other members of the Society a few observations noted at various places not within the limits of totality of the Eclipse. Mr. F. Fedden sent a sketch shewing the several phases of the obscuration as seen at Bhooj in *Cutch*. Mr. A.B. Wynne also sent an excellent series of diagrams shewing the successive

Sold at the
SOLAR ECLIPSE 18TH AUGUST 1868.
As seen from Col. Winecomb's house at Rajawarra, Madras Presidency

BY
MAJOR JOHN MACDONALD,
Offg. Deputy Surgeon General and
Suplt. Illinois State Surgeon, Lower Circle.

Philosophy, ed. Socy. Bengali, Ser. 1961.

plate V



UNDER LIME

LOWER LIMB.

Latha, at the Surveyor General's Office, Calcutta, October 1864

appearances at the same place. With regard to the frequently noted effects of an eclipse on animals, Mr. C. Oldham, who saw the eclipse at Madras, writes "the crows roosted; my fowls went on as usual picking up their food, and apparently undisturbed, but as the light returned again, my neighbour's fowls commenced crowing furiously.—Dogs were totally unaffected." It was remarkable that every observer agreed in noting that the darkness resulting from the eclipse was not by any means so great as they had anticipated. This might be due to the hazy state of the atmosphere, diffusing the light very largely. The beautiful drawings which had been laid before the Society all agreed also in a very remarkable way in the position and character of the red protuberances; whether in those from Beejapoor on the west side of the Peninsula, those from Bezwarra on the east, or those from the Bay of Bengal still further to the East. The latter, the sketches taken from the deck of the steamer *La-Bourdonnais*, were peculiarly interesting and valuable as showing the very marked elongation of the corona in a given direction, a fact also noticed by Mr. C. Oldham at Madras; and which had frequently been observed before. The Society he was confident would join with him in thanking Major Macdonald and Cap. Tanner for their communications, and also in expressing a hope that they would obtain a record of the more detailed observations with the spectroscope, and the polariscope. As yet they were only aware that these observations had been fortunately successful. It was a great disappointment and a source of deep regret that the admirably equipped party sent out by the Prussian Government had been so unfortunate.

The paper by J. Avdall, Esq., *On Armenian Grammars*, the receipt of which was announced at the last meeting, was laid before the Society. It contains a valuable list of all grammars of that language, with short critical notes.

The President then called upon Bábú Rájendralála Mitra, to read his *Notes on Inscriptions from Mathurá*.

(Abstract.)

Sometime ago in digging into a mound, while clearing a site for a new kutcheri for the collectorate of Mathura, the workmen came to what turned out on further excavation to be the remains of a large Buddhist monastery. The building was of the red sandstone now so common in Delhi and Agra, and contained a number of statues more or less mutilated.

lated, of the same material. The figures were all Buddhist, and they decided the character of the building in which they were found. Among the sculptures were the bases of several large pillars bearing inscriptions in corrupt Sanskrit and the Gupta character. Some of the statues had similar inscriptions. The bulk of the stones, sculptures, and statues found were broken into ballast for the repair of roads, but a few were rescued for the Society's Museum. Among these are several which bear inscriptions, and the paper supplies transcripts and translations of these. Three of the inscriptions bear dates, and according to one of them, the monastery was founded by the Scythian king Ooerki, Sanskrit Huvishka, B.C. 50—80, whose dominion in India seems to have extended so far down as Mathura. Another dated inscription gives fragment of the name of a king which has been conjectured to be Vāsudeva.

The President then called on Mr. Blochmann, to read his *Notes on certain Persian Poets styled Sultán*.

Notes on the Poems of Prince A'zam uddín, a grandson of Tipú Sultán, and on three other Persian Poets, known under the name of Sultán, by
MR. H. BLOCHMANN.

Among the presentations announced this evening the *Diván-i-Sultán* deserves a short notice. The book contains a collection of ghazals, or love poems, by Prince Muhammad A'zamuddín, a grandson of Tipú Sultán. The name of the father of the poet is Prince Muhammad Shukrullah, whose brother, Prince Ghulám Muhammad, is the only surviving son of Tipú. Prince A'zamuddín, as I am informed by the donor, was born in 1809 at Sháhnagar, near Calcutta. Like his brother, Sháhzádah Bashíruddín, who lives at present at Chinsurah, he was a man of extensive learning. He died in September, last year.

According to the custom of all Persian poets,—a custom which has become an established rule since the times of Sa'dí,—Prince A'zamuddín wrote under an assumed name. He chose the name of *Sultán*. The collection is stated in the preface to have been made by Mír Ghulám 'Alí of Calcutta, who says that the poems of the Prince amount to fifty thousand lines, and upwards. Of these the book before the Meeting contains a selection of about six thousand lines. Before the book was sent to press, the Prince had been asked to revise some of the

ghazals; but he declined on the ground that he had wasted sufficient time in the composition. Strict Muhammadans look upon making poems as a worldly, and therefore useless, occupation; they make, however, an exception in favour of religious poetry. Thus Badáoní, the historian of Akbar's time, one of the greatest zealots the Islam has produced, complains in his work* that, in his youth, he occupied himself with making poems, an occupation fit, as he says, for the ages of heathenism, and at variance with the spiritual nature of man.

It must, however, be borne in mind that Orientals are apt to explain love poetry, or poems sung in praise of wine, in a *mystical* sense, in which case they consider such poetry lawful; and although there are examples on record of poets who freely indulged in love and wine, as *Fughání of Shíráz*, who provided himself with a leg of beef, and remained concealed in a tavern during the Ramazán, the instances are far more numerous of those who lived abstemiously, and never perhaps touched a drop of wine. For a European mind it may look like an anomaly that a Muhammadan poet should choose to speak of forbidden things as wine, often in the most sensual manner, in order to describe the mysterious aspirations of the heart to God; but the biographies of many poets, and the evidence of their works, as in the case of Nizámí, prove the anomaly to be a fact. Hence the names of great poets, as Nizámí, Sa'dí, and Háfiz, appear now-a-days surrounded by a halo of sanctity, and their tombs are frequently resorted to by pilgrims.

The example of the classical poets compels a modern poet to speak of love and wine; in fact, besides these two subjects, he has little freedom. He is even tied in the choice of his metres. The *Gul-i-Kushétí*, a poem by Mír Naját, the *Zalikhá* by a poet like Firdausí, are continually found fault with, because they are not written in the metres which are now believed to be appropriate. For an Indian especially, whose language is not Persian, it is a difficult thing to write Persian verses. This can only be accomplished after years of study; for the metrical art will require as much application as the study of the language itself.

The language of Prince A'zamuddín's poems is, on the whole, flowing. It shews occasional traces of archaisms, which prove the learning of the poet and his Indian origin; and although his thoughts do not

* Vol. III. p. 239, ed. Bibl. Ind.

rise to the sparkling conceptions of Náqir 'Alí of Láhór, P'jáz of Agrah, and Bedil, the great poets of the time of Aurangzeb, nor to those of Mirzá Nausha of Delhi, the Persian poet of our age, they are pretty, and abound in elegant allusions.

I add a few particulars on three other Persian poets, who have written under the poetical name of *Sultán*.

The name of the first is Sultán Muhammad, son of Shibábuddín, a nobleman of the Persian town of Qum, which lies half-way between Teherán and Tefláhán. According to the *Atashkadah*, Sultán Muhammad became the chief of the town; but it is not mentioned when he lived. To judge from the few verses quoted in the *Atashkadah*, he belongs to the *Mutaakhhharín*, or modern poets, i. e., the poets of the last three centuries. The following *Rubá'i* is by him.

An dīl kih ba 'aish sarfardāzi mīkard,
Bar hajr nazar bah turktāzi mīkard,
Dī dar khum i ān du zulf i purtāb u khumash
Dīdam kih nishastah būd u bāzi mīkard.

A heart which once engaged in life's giddy whirls,
 And looked with scorn profound on lover's pain,
 Gets soon entangled in a fair maiden's curls,
 And plays, a helpless captive, with his chain.

Another poet, who adopted the poetical name of *Sultán*, is the renowned 'Alí Qulí, better known in Indian history as *Khán Zamán*, a title bestowed upon him by the Emperor Akbar. *Khán Zamán* was the son of Haidar Sultán, an Uzbak noble, who had attached himself, in Persia, to Humáyún, Akbar's father. When the exile of that monarch ended with his conquest of Qandahár, *Khán Zamán* was raised by Humáyún to the dignity of an *amīrulumará*, or principal grandee. He distinguished himself in the wars which led to Humáyún's restoration in India. The greatest service which he rendered to Akbar, a few months after Humáyún's death, was the victory which he gained, at the head of Akbar's advance guard, over the much larger army of Hémú in the battle of Panípat, on the 13th November, 1556. I mention this, because two passages in Elphinstone's History of India (*Second edition*, pp. 462 and 496) read as if the battle of Panípat had been won by Bairám *Khán* on the *fifth* of November,

1556. But the text of Badáoní, printed by our Society, fixes the *thirteenth* as the day of the battle,* and also shews that Bairám, together with Akbar, was at some distance from Panípat, and could only send reinforcements. For this victory, which enabled Akbar to enter into Dihlí and Agrah, 'Alí Qulí received the title of *Khán Zamán* (an abbreviation for *Khán i Zamán*), or *the Khán of the age*. After this we find Khán Zamán driving the Afghans from the provinces east of Agrah, and conquering Lak'hnaú. In courage and martial genius he is placed by Badáoní above Bairám; but his unruly and overbearing temper, which ultimately led him into open rebellion, seems to have been the cause why Bairám was in greater favour with Humáyún, and was chosen as Regent for the young Akbar. Badáoní in his praise of Khán Zamán, goes so far as to say that he, and his brother Bahádúr Sháh, gained unparalleled victories in the Eastern tracts of Hindustan, and that both would have been fit to be kings, if their rebellion had not issued unsuccessfully. The booty which he collected in these wars, was too tempting for Khán Zamán; he withheld the share of the Emperor, and mutinied. Though Akbar, in 1565, condoned the offence, Khán Zamán remained dissatisfied, and again rebelled two years later, when Akbar had to move personally against him. A fight ensued; Khán Zamán's horse was killed, and he himself thrown to the ground. An elephant driver saw him, and attacked him. The elephant crushed Khán Zamán to pieces, "so that his bones," says Badáoní, "became like pounded antimony, and his body like a bag full of chess figures." His head was recognized by his Hindu manager Rái Arzání, who put the Khán's head over his own, and cried loud. Khán Zamán's brother was also killed. The fight took place near Jaunpúr, on Monday, the 9th of June, 1567.

Khán Zamán was a patron of men of learning, and of poets, many of whom lived with him. Among the latter was the great poet *Ghazálí of Mashhad*. I do not know whether Khán Zamán's poems exist in a collected form. Badáoní and Bakhtáwar Khán have preserved a few of his passionate verses. In his poems he praises a youth of the name of *Sháham Bég*, whose story, as related by

* It would appear that Elphinstone read *ducum*, the *second*, instead of *duhum*, the *tenth*, of the month of Muharram, A. H. 964. Bakhtáwar Khán, in his *Mír-át-ul 'Álam*, agrees with Badáoní.

Badáoní, is an example of the licentiousness among the nobles, which caused Akbar so much annoyance.

The last poet known to me, that adopted the poetical name of *Sultán*, is Sultán Muhammad Siplakí. He lived at the time of Humáyún and Akbar, and was called *Siplakí*, as he came from *Siplak*,* a place near Qandahár. To his annoyance people changed the name of *Siplakí* into *Sipkálí*, the Hind. word for a lizard. He composed a poem in praise of Khán Zamán, who gave him a present of a thousand rupees, requesting him at the same time to discontinue the poetical name of *Sultán*, as it was the same as his own. Siplakí naturally refused, and told the Khán that he had got that name from his father, and was known as a poet in India under the name of Sultán. Khán Zamán got enraged at the refusal, and, as if the life of a man was nothing, called for an elephant, and gave the order to trample the poet to death. Mauláná 'Aláuddín i Lárí, the teacher of Khán Zamán, who was present, interposed, and asked his pupil to pardon *Siplakí*, if he could make on the spot a poem of the same metre† and rhyme as a certain poem of the poet Jámí; but to kill him, if he were unable to do so. This was done; the poem satisfied Khán Zamán, who hasty as he was, doubled his former present, and said much in praise of the poet. Siplakí thought it, however, best to withdraw from the neighbourhood of the unprincipled chief, and went ultimately to the Dek'han, where he took part in the siege of Bijánagar. Badáoní blames him for having given a refusal to a nobleman like Khán Zamán. He gives a few of Siplakí's verses. I do not know whether there exists a collection of his poems.

Maulvi Abdullatif Khan Bahadur said that Prince A'zamuddín, whose Díwán was before the Meeting, was one of the best Persian writers of the present age. He excelled both in prose and poetical compositions. His brother, Sháhzádah Bashíruddín was likewise known in Calcutta for his elegant writings; and he (the Maulvi) trusted that the Sháhzádah would yield to the repeated request of his numerous friends, and lay his writings before the public in a more permanent form.

* There may be a slight error in this name, as the MSS. used for the text of Badáoní give different spellings.

† Two poems of the same metre and rhyme are said to be of the same *samín*, or ground, and the later of the two is the *jawáb* of the older poem.

The President then asked the meeting, as the evening was far advanced, to defer to the next meeting Dr. Oldham's paper on the action of the Ganges in the Benares province.

The receipt of the following communications was announced :—

1. From Babu Rajendra Lala Mitra, *Notes on the inscriptions from Mathura.*

2. From H. Blochmann, Esq., *Notes on the Poems of Prince A'zamuddin, grandson of Tipu Sultan, and on three other Persian Poets styled Sultan.*

3. From W. Oldham, Esq., LL. D., *Memoranda on the action of the Ganges in the Benares Province.*

The following additions have been made to the Library since the last meeting.

Presentations.

*** *Names of Donors in Capitals.*

The Journal of the Royal Asiatic Society of Great Britain and Ireland, Vol. III, Part II, N. Series.—THE SOCIETY.

The Proceedings of the Zoological Society of London, Part III, 1867.—THE SOCIETY.

List of Vertebrated animals in the Zoological Society's Garden.—THE SAME.

Report of the Council and Auditors of the Zoological Society of London.—THE SAME.

Transactions of the Zoological Society of London, Vol. VI, Part 5.—THE SAME.

Proceedings of the Royal Society of London, No. 102.—THE SAME.

The Anthropological Review and Journal of the Anthropological Society of London, No. 2.—THE ANTHROPOLOGICAL SOCIETY.

Bulletin de la Société de Géographie, Juin 1868.—THE GEOGRAPHICAL SOCIETY OF PARIS.

Journal Asiatique; No. 41.—THE ASIATIC SOCIETY OF PARIS.

Verhandlungen der K. K. Geologischen Reichsanstalt 1868, No. I.—THE IMPERIAL ACADEMY OF VIENNA.

Jahrbuch der Kaiserlich-Königlichen Geologischen Reichsanstalt, Band XVIII, No. 1—4.—THE SAME.

Journal of the Agri-Horticultural Society of India, Vol. I, Part II, N. S.—THE SOCIETY.

Journal of the Chemical Society of London, April, May, and June, 1868.—THE SOCIETY.

Records of the Geological Survey of India, No. 2.—THE GOVERNMENT OF BENGAL.

Ditto, Ditto, Another copy.—THE SUPERINTENDENT GEOLOGICAL SURVEY OF INDIA.

Selections from the Records of the Bombay Government, No. CVII, New Series.—THE GOVERNMENT OF BOMBAY.

Report of the Revenue Survey Operations of the Lower Provinces from 1st October 1860 to 30th September, 1867.—THE GOVERNMENT OF BENGAL.

Selections from the Records of the Government of India, Foreign Department, No. LX.—THE GOVERNMENT OF INDIA.

Geschichte der herrschenden Ideen des Islams, von Alfred von Kremer.—THE AUTHOR.

Díwán i Sultán.—MAULVI MUHAMMAD ZUHURULHAQ.

Statistics of Longevity, No. II.—CAPTAIN T. C. ANDERSON.

Purchase.

Revue des deux Mondes, 15 Juin, 1868.

Revue de Zoologie, No. 5, 1868.

Revue Archeologique, Juin, 1868.

The Westminster Review, July, 1868.

Comptes Rendus, Nos. 22 and 23, 1868.

Journal des Savants, Mai, 1868.

Annals and Magazine of Natural History, No. VII. 1868.

The Quarterly Journal of Science, No. XIX.

Reeve's Conchologia Iconica, Parts 270, 271.

Reise der Oesterreichischen Fregatte Novara; Zoologischer Theil, Band II, Coleopteren, Diptera.

Ibn-el-Athiri, edited by Dornberg, Vol. II.

Zenker's Dictionnaire Turc-Arabe-Persan, Heft XII, Bogen 111-120.

Hunter's Annals of Rural Bengal.

Exchange.

The Athenæum for June 1868.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,

FOR OCTOBER, 1868.

The monthly Meeting of the Society was held on Wednesday the 7th instant, at 9 o'clock p. m.

T. Oldham, Esq., LL. D., President, in the Chair.

The minutes of the last meeting were read and confirmed.

The receipt of the following presentations was announced :—

1. From Dr. F. Mason, A copy of a *Burmese Handbook of Medicine*, by the donor.

2. From Dr. J. B. Davies, A copy of *Grecian Anthropology*, by the donor.

3. From the Curator Government Books, North-West Provinces, A copy of *Report on past famines in the North-West Provinces*, by C. E. R. Girdlestone, Esq.

4. From Dr. H. A. Jaeschke, A copy of *Ueber die Phonetik der Tibetanischen Sprache*, by the donor.

5. From J. Avdall, Esq., A copy of the second edition of *Les Auteurs Hindoustanis et Leurs ouvrages*, by M. Garcin de Tassy.

6. From Major F. Tennant, R. E., A *photograph of the Moon on glass*.

7. From the Government of India, *Ethnological Report on the Races of Rajputana*, with photographs.

The following gentlemen duly proposed and seconded at the last meeting were balloted for and elected ordinary members—

W. Eddowes Esq., M. D.

S. M. Shircore, Esq., M. D.

The following are candidates for ballot at the November meeting :—

Lient. H. H. Cole, R. E., proposed by Dr. J. Fayrer, seconded by Mr. C. E. Bayley.

Captain W. R. M. Holroyd, Director of Public Instruction, Panjab, proposed by Lient.-Col. R. A. Maclagan, seconded by Mr. M. A. Kempson.

C. Pearson, Esq., Inspector of Schools, Panjab, proposed by Lient.-Col. Maclagan, seconded by Mr. A. Kempson.

J. C. Geddes Esq., C. S., Magistrate and Collector of Chittagong, proposed by the President, seconded by Dr. F. Stoliczka.

The following gentlemen have intimated their desire to withdraw from the Society—

G. A. D. Anley, Esq.

A. W. Croft, Esq.

The Council report that they have elected C. H. Tawney, Esq. M. A., a member of the Philological Committee.

The Council also report that they have sanctioned the publication of the *Poems of Chand* in the Bibliotheca Indica.

Mr. Oldham, on behalf of Major Tennant, R. E., presented to the Society a photograph of the moon taken on the 11th August, just seven days before the solar eclipse of the 18th. It is a positive photograph on glass, and shews very clearly some of those curious crater-like mountains, which are so numerous on the moon's surface.

Mr. Oldham also, regretting the absence of Major Tennant himself, stated that he had received from that officer, the gratifying intelligence that the party of observers at Aden had succeeded in getting some rough drawings of the Protuberances, &c. Their spectroscope observations failed from clouds, as also their polariscope. They got spectroscope results on the Corona, and measures of the protuberances. The observers at Aden were Professor Weiss, and Ensign Riha. Dr. Fritsch of the Prussian party on the west side of India got some photographs. Major Tennant also sent a drawing by Professor Kern Luximon, who was at Bijapoor, with Captains Tanner and Haig.

The President then called on the Secretary to read Dr. W. Oldham's paper, which had been deferred at the last meeting.

Memorandum on the Action of the Ganges in the Benares Province,—
by WILTON OLDHAM, Esq., LL. D., Ghazee-pore.

In the Benares Province, the banks of the river are of a two fold character :

1st. Permanent.

2nd. Non-permanent.

The permanent river banks are raised above the height of the highest floods, and contain a firm substratum of kunkur, or else a considerable proportion of kunkur mixed with clay. The permanent river banks run in ridges nearly parallel to each other, but varying in distance apart. In some places, *e. g.*, at Beerpoor in the Ghazee-poor district, the permanent banks are only about a mile or two miles apart; at other places, as for example opposite Chunar, or opposite the Zumaneeah Railway station, the permanent river banks are eight or ten miles apart.

The river in very few places washes two permanent banks; more commonly there is a permanent bank on one side and a non-permanent bank on the other side, with the permanent bank at some distance further inland; or else the river washes two non-permanent banks, and the permanent banks are not reached by the water except in an unusually high flood.

The destructive fluvial action of the Ganges is of a two-fold character :

1st. Slow.

2nd. Rapid.

The slow destructive action of the river is its action on the permanent banks, and the rapid action on the non-permanent banks.

The destructive action of the river is invariably on the concave bank of the river. Where the river runs straight, neither bank gains or loses; a convex bank always has a tendency to gain by accretion, and a concave bank invariably loses by diluvion. This is easily accounted for; the current sets dead against a concave bank, and causes the washing away and hollowing out of the portion of the bank near the river, and consequently the fall and destruction of the bank. The civil station of Mirzapoor is built on the permanent bank of the river on the concave curve. There is a constant destruc-

tive action going on; but owing to the permanent character of the bank, the destruction is very slow, a few feet in a few years. The villages of Manipoor and other adjacent villages in the Kurunda pergunnah of the Ghazee-poor district are situated similarly in the concave curve in the river, but there the bank is *non-permanent*. The destructive action of the river is, therefore, of the most rapid character. Since 1840, a tract of country containing about 3500 acres of rich land has been destroyed, and the river course has at the point of maximum deflection changed two miles, i. e., the present river edge is two miles from where it was in 1840. These facts are proved by comparing the pergunnah map prepared in or about 1840, by the officers of the Revenue Survey with the village boundaries and the river bank as they now exist.

The destructive action of the river in such places is not merely in the rainy season, but continues throughout the year. Large masses of the bank daily fall into the river, and in the cold season, large masses of earth may be seen lying near the water's edge having on them wheat in ear and flax in flower, which a few days before formed part of a flourishing and beautiful field. The river's bank in the Kurunda pergunnah is entirely of a non-permanent character, and the pergunnah contains no backbone of kunkur or any other resisting material. The rapid changes which are now going on, are likely to continue until the river changes its course, and runs in a straight course from Chochukpoor to Ghazee-poor along the permanent northern banks of the river, which is beyond the boundaries of the pergunnah; the pergunnah will then lie at the south instead of the north of the Ganges.

The permanent river banks may be considered the limits of the area, liable to alluvial increment and *diluvion*, as the destructive influence of the river on the permanent bank is too slow to be of any fiscal importance.

The immediate effects of a change in the river's course are generally injurious, as the land destroyed is land which, having been formed some time, is well raised and productive, while the new land formed on the opposite bank is at a low level, generally sandy, and at first of no value.

That portion of the river's bed which lies low, has, in the rainy season, a deep channel of the river flowing over it. A deep channel, as a rule, has a rapid current, and consequently the only deposit which can be formed is of sand, as mud would be swept away by the stream. After, by deposits of sands for a few years, the bed has been raised, it is in the rains only covered by a shallow, and therefore a slow stream, and under such circumstances, the deposit of earthy particles is possible, and a muddy deposit is formed rapidly. I have myself seen in a small bay of back water of the river, out of the current, a deposit of about five feet thick of fine sand and earth formed in a few days.

It may be remarked that the river's bank on the concave side of a curve is always precipitous, as the destructive scooping action of the current destroys a slope, and hollows and undermines the bank. On the other hand, the bank on the convex side of the curve is always gently sloping, formed recently by gradual accretions of sand, at the part near the river, and of earth on the upper portions, where in the rains the current runs with little force.

The bank on the concave side may be permanent or non-permanent, but the river's bank on the convex side is *always* non-permanent, because formed by recent deposits and containing no kunkur. Though non-permanent in its character, the convex bank is safe and lasting from its situation, and from its immunity from the action of the current. The Benares Railway Station is built on a portion of the bank, non-permanent in character, but safe from its convexity; while the cities of Benares and Mirzapoor are built on portions of the concave bank, permanent in character, but exposed to the destructive influence of a current.

A large mass of kunkur deposit has a remarkable power of resisting the destructive influence of current. The kunkur bank at Adilpoora within the Sooltanpoor Cantonment, nearly opposite to Chunar, has for years stood unharmed by a most violent current.

The investigation of the law of changes in the river's bank, is of some practical importance in connection with the navigation of the river, as it is always desirable to have some foreknowledge of changes

likely to occur in the navigable channels. Trees falling into the river with portions of the bank form *snags*, dangerous obstacles to navigation. It may safely be asserted that every year all trees on the concave bank of the river should be cleared to within a distance of 500 feet, where the bank contains no kunkur, and is non-permanent; and to within a distance of 10 feet, where the bank contains kunkur and is permanent. On the other hand, it is a useless destruction of property to cut down trees on the convex bank, or on either bank in a straight course of the river. In those parts of the Ganges where the permanent banks are far apart, the river runs in reaches from the northern to the southern permanent bank, then curving round again to the northern permanent bank, and so on. In those parts where the permanent banks are near each other, the course of the river is tolerably straight, and changes little from year to year.

Ghazepore, August 24th, 1868.

The President invited discussion on the paper just now read. Mr. Medlicott said—

“Being called upon to speak, I can only say that the paper we have just heard read contains nothing whatever that is new, or that gives greater precision to previous knowledge. Without having ever seen a river, one can tell that the current must set to the concave bank, or that a bank of recent silt will wear incomparably faster than one of consolidated clay. The constant depredations and changes of the great rivers are familiar to every resident of the plains of India. As to the conditions of the river in that region, it has been repeatedly described how the large rivers “up country” run in *Khádars*—wide valleys limited by the high permanent land of the adjoining *Duabs*. The locality noticed in this paper is near the lower limit of the region where such conditions obtain—where the river from being erosive becomes formative. Mr. Ferguson, in his invaluable paper on “The Recent Changes in the Delta of the Ganges,” has pointed out that below Buxar, the mean fall of the river becomes about six inches in the mile, which is the approximate limit assigned by Mr. Ferguson for a depositing river, and that above Buxar, the fall becomes thirteen inches in the mile.

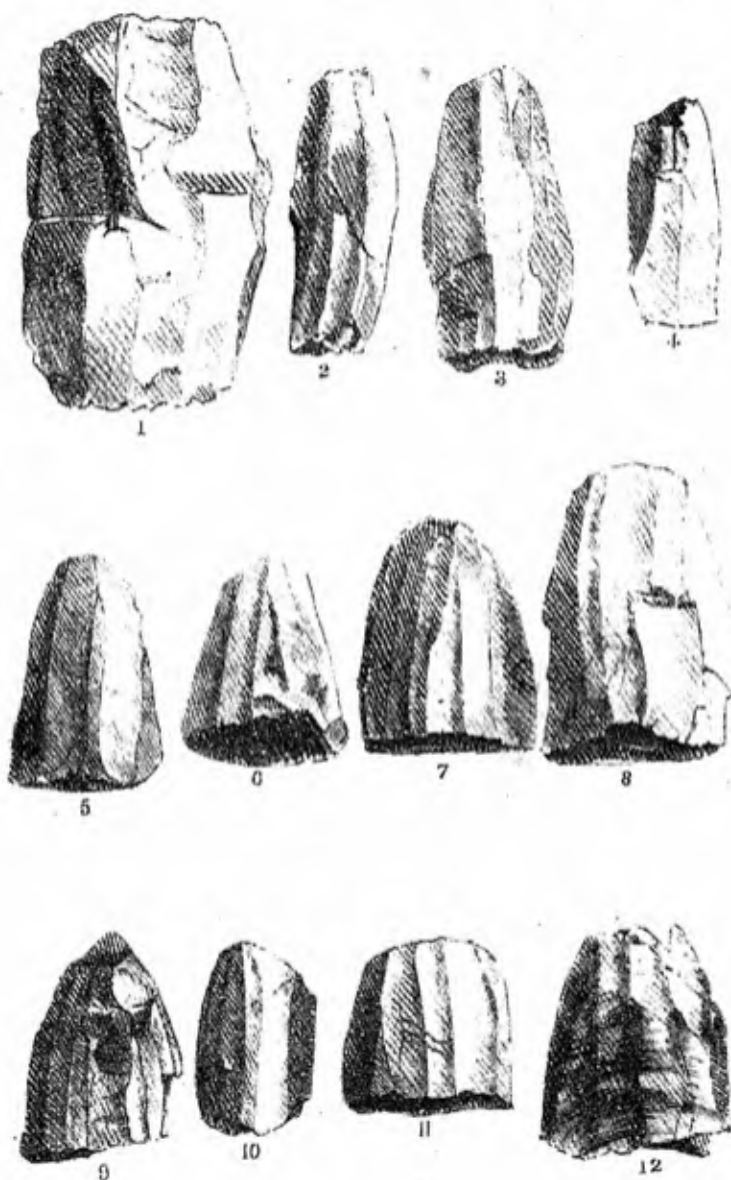
A conversation took place in which several gentlemen joined.

The President said, in concluding the remarks on this paper, that he entirely agreed with Mr. Medicott, that there was but little of novelty in the paper which had been read. It was a purely local, and simple description of facts; not pretending to great scientific accuracy. For example, it was scarcely correct to speak of the eroding action of the river as of two kinds, slow and rapid, inasmuch as the action was in all cases of the same kind, and the slowness or rapidity with which the results were produced, depended on the nature of the material acted upon. Again Mr. Wilton Oldham had, in speaking of the 'permanent' banks of the river, used the term evidently in rather a general, or relative sense. No bank of an eroding river could truly be called permanent; still the word was applicable, when the rate of erosion was so slow, that changes were only traceable after long intervals. But Mr. Oldham had also, in this paper, used the term in a sense somewhat different from that in which it is commonly used. Every river flowing in any alluvial plain, which may be taken as comparatively homogeneous, has for itself at different times, and subject to differences in the slope of its bed, a plain or surface, within the limits of which it tracks its course back and forward, depositing here, and cutting away there, and thus often passing and repassing over the same ground. And so far as general observations are concerned, these limits of oscillation are so slowly changeable, that the banks, limiting the plain of the river, which for the most part become tolerably well marked, may be, and generally are, called the 'permanent' banks, those banks within which (abstracting considerations of external forces) the fall of the river's bed and the amount of water combine to restrain the oscillations of the river. If taken in this sense, the permanent banks of a river flowing in an alluvial plain, may be generally considered to be composed of similar materials to the country around, and would be, if the river were directed against them, as liable to erosion as any other part of the country.

But the case stated by Mr. W. Oldham is quite different; here the permanent banks, he speaks of, are composed of material quite of a different kind and of a greater resisting power. He describes these deposits as characterized by kunkur, and being of a hard stiff clay. And

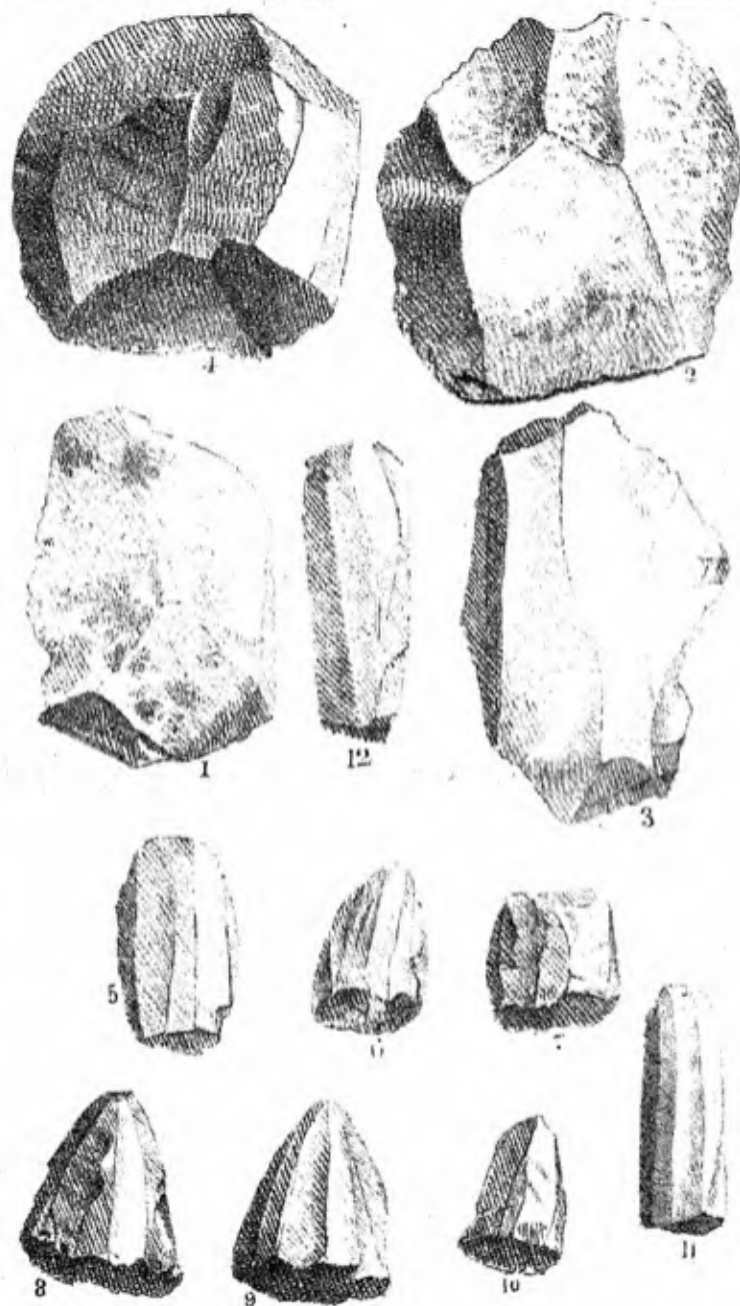
in this, without knowing it, the writer has referred to one of the most interesting facts in the geology of the Gangetic plains. Above Benares we might say, certainly above the junction of the Jumna and Ganges at Allahabad, the prevailing character of the materials forming the wide plains in which these rivers flow, is a hard stiff clay abounding in kunkur, which in places forms great beds or sheets. This, associated occasionally, chiefly in the upper portions of the river valleys, with pebbly beds often concreted by lime forms the prevailing character of the beds. Below Benares, however, the greater portion of the plain of the Ganges from the foot of the hills on the north, to those on the south, is composed of much more recent deposits, the result of the action of the river itself, chiefly composed of soft incoherent beds of fine sand and silt. Here and there, through these, we find standing up portions of the kunkury clays, &c., to which we have referred, under circumstances which shew that they are remnants of a once widely spread and general deposit, now existing as islands in the stream of the more recent Gangetic alluvium. For these other deposits, we have generally used the term first used by the lamented Dr. Falconer, and called them the 'Older Alluvium.' It is, however, a term apt to mislead, inasmuch as the age of these deposits is very widely removed from that of the true alluvium. These kunkuriferous beds in the Jumna, yielded many valuable fossils years since, which Falconer himself identified with those found in similar deposits in the valley of the Nerbudda, and looking to the proximity geographically, and to the great similarity lithologically, of the two deposits coupled with the similarity of the fossils contained, there seems little question that the so-called Older Alluvium of the Jumna and Ganges is of the same general age as the so-called 'Pleiocene' deposits of the Nerbudda and Godavery. Below Allahabad but few fossils have been found in these deposits. I have a joint of a thigh bone (probably bovine) which was obtained in sinking a well near Patna, and a few other fragments have from time to time been found. But even in the Nerbudda, where fossils are much more numerous, they are local in their distribution.

These islands or isolated areas of the older deposits occur as noticed by Mr. Oldham, near Ghazeepore, south of the Ganges; they



AGATE CORES FROM JUBRULPOOR.





AGATE CORES AND FLAKES FROM JUBBULPOOR.
AND CHINDWARA.

Drawn & Lith'd by H. D. P. Student Govt. School of Art, Cal.
T. Black & Co. Cal.





stretch along from Buxar to near the Sone, forming the higher ground north of Beeheea; they occur again under the narrow ridge on which the cantonment of Dinapore is placed; under the city of Patna; again under Bhagulpore; still further east near Colgong; forming the high ground extending northwards from Rampore Beaulah towards Darjeeling, again they constitute the often-talked of Madhopur jungle, north of Dacca; have been traced by Mr. Medicott on the flanks of the Garo hills, and by Captain Godwin-Austen at the foot of the Bhootan hills. Thus the permanence of the banks noticed by Mr. W. Oldham in this brief paper is due to the fact, that there the river has cut its channel through one of these isolated areas of the older beds, which, as compared with the recent alluvium, have just as much greater a power of resistance as an ordinary sandstone would have as compared with loose sand.

The determination of this character of the river's bank, is of importance, as the writer has shewn, both as affects the navigation of the river, and the agriculture of the district. And while he has not added materially to the knowledge of the action of the river, it is always desirable to have on record such local observations, detailed with care, which only those locally resident can attempt.

The President then asked the Philological Secretary to read an extract from a letter received from Prof. A. Kuhn, Berlin.

Bábu Rájendralála Mitra said, he thought, the extract would not be unwelcome to many members of the Society in this country. It referred to a subject of considerable interest, which, in ancient times, inspired the imagination of man with some of the richest ideas of poetry, and in later days afforded the means of unravelling many a classic myth—the gorgeous sunrise of the East. To it Homer, it was said, owed his plot of the Trojan war, and the Rámáyana, it was presumed by some, had nothing more substantial for its substratum. To the poets of the Vedic age it was a most fruitful theme, and the Vedas were interspersed with a number of myths founded on it. One of them is indelicate and highly offensive; but with the Rishis of the primitive age, untrammelled by the amenities of modern civilization, it was a great favorite. It was no other than the rape of Ushá by her father Brahmá,—the dawn likened to a charming nymph chased by her progenitor, the sun. In one version of this myth, given in the third chapter of the Aitareya

Brāhmaṇa (section 33), Dawn is represented to have, in fear of her father, assumed the form of a red deer, whereupon Prajāpati assumed the form of a fierce animal, named *riṣhya*, and chased her. The gods, disgusted at the sight of the incestuous attempt, but unable individually to check the ravisher, put forth the aggregate of their most fearful qualities in the form of a god named Bhutavan or Rudra, who pierced, with an arrow, the lustful brute, which immediately transformed itself into the constellation Orion. A counterpart to this myth has been found in a German tradition by Professor Kuhn, and the letter contains an abstract of a paper on the subject recently published by him. Professor Kuhn writes—

‘Both in our ancient and modern popular traditions, there is universally spoken of the Wild Hunter, who sometimes appears under the name of Wodan or Goden, and was, in heathenish times, the supreme god of the ancient German nations. This god coincides, both in character and shape, with the ancient Rudra of the Vedas, *vide* p. 99. Now there is a class of traditions, in which this ancient god is said to hunt a stag and shoot at it, just as Rudra in the Brāhmaṇas is represented as shooting at the *riṣya* and *rohit*. The stag, in German mythology, is the animal of the god Freyr, who, like Prajāpati, is a god of the sun, of fertility, &c., so that the shot at that stag is to be compared with Rudra’s shooting at the *riṣya* = Prajāpati. I have further endeavoured to show that some indications exist in the mediæval penitentials of Germany and England, which give us to understand that at the close of the old year, and at the beginning of the new one (we call that time “die Zwölften” or *the twelve days*, the *dvādaśāha* of the Indians), there were mummeries performed by the country people, in which two persons seem to have been the principal performers, the one of whom was disguised as a stag, while the other was disguised as a hind. Both represented a scene, which must have greatly interested and amused the people, but very much offended the clergy by its sordid and hideous character; and from all the indications which are given in the texts, communicated by me, pp. 108-180, we may safely suppose that the chief contents of this representation was the connexion of a stag and a hind (or of an old woman), which was accompanied by the singing of unchaste songs. From English customs at the New Year’s Day, we may also infer that

the hunter's shooting at this pair was even a few centuries ago, nay is even now, not quite forgotten. Now as the time of the 'twelve days' was with our ancestors the holiest of the whole year, and the gods were believed to descend at that time from heaven, and to visit the abodes of men, we may firmly believe that this representation also was a scene of the life of the gods. I hope to have thus proved that the brahmanical and German traditions are almost fully equal, and I have finally attempted to lay open the idea, from which the ancient myth proceeded. According to my explanations, our common Indo-European ancestors believed that the sun and daylight (which was so to say personified under the image of various animals, as a cow, or bull, a horse, a boar, a stag) was every day killed in the evening, and yet re-appeared almost unhurt the next morning. Yet a decay of his power was clearly visible in the time from midsummer to midwinter, in which latter time, in the more northern regions, he almost wholly disappears, and, as in Northern Germany during the time of the twelve days, is seldom to be seen, the heaven being then usually covered all over with clouds. I have, therefore, supposed it was formerly believed that the sun was then completely destroyed by a god, who was both a god of night and winter as also of storm, Rudra = Wodan. The relics of the destroyed sun, they seem to have recognised in the brightest constellations of the winter months, December and January, that is, in the Orion and the surrounding stars. But when they saw that they had been deceived and the sun re-appeared, the myth gained the further development of the seed of Prajapati, from the remnants of which a new Aditya as well as all bright and shining gods were produced. I have further shewn that both Greek astronomy and German tradition prove to be in an intimate relation with the brahmanical tradition; for the former shows us, in almost the same place of the celestial sphere, a gigantic hunter (mrigavyádha = Sirius; Orion, the hunter = mrigaśiras); whilst the latter has not yet forgotten that Saint Hubertus, the stag-killer, who is nothing but a representative of the god Wodan, had, like Rudra, the power of healing all diseases (the "bhishak-tama" of the Vedas), and particularly possessed cures for mad dogs, which not only were his favourite companions, but were also in near connexion with the hottest season of the year, when the declining of the sun begins, the so called *dog-days*."

With regard to the animal described in the Vedas as the *Rishya*, which word Dr. Haug translates by "a kind of deer," and Professor Wilson by "a white-footed antelope," the Bābu read the following extract from a letter of his to Whitley Stokes, Esq., in which he conjectures it to be the *Nilgāo*.

"There is nothing positive to prove what particular species of animal the *Rishya* is. A *Mṛiga* no doubt it is; but as that word is a generic term, including all the deer as well as the antelopes, it does not help me in the least. The Paṇḍitas, whom I have consulted, seem not to know much of the subject, and Sāyana, apparently, was not better off when he commented on the *Aitareya Brāhmaṇa*. He could only ascertain that the *Rishya* was a species of deer (*Mṛigavis'eshah*), and he had to prove it by a quotation from a lexicographer which says, "the *Gokarna* (supposed with some doubt to be the *Nilgāo* by Wilson), the spotted axis, the black antelope, the *Rishya*, the red deer, and the *chamarī* (*Yak*) are deer;" *gokarṇaḥ prishatainarshya rohita-schamarimṛigāḥ*). But great as he was as an expounder of the Vedas, and a profound Sanskrit scholar, Sāyana was no naturalist, and had, therefore, to stumble over every passage that referred to Vedic fauna. His acceptance of the *Yak* (*Poephagus grunniens*) as a deer is an instance in point. Another, and a very remarkable one, occurs in the third Book of the *Taittiriya Brāhmaṇa*, p. 637 of my edition, in which he describes the *gomṛiga* to be "either a wild ferocious horned cattle, or a hybrid between a deer and a cow." Judging from the name *go* and *mṛiga*, "cow" and "deer," and the mixed antelopine and bovine character of the *Nilgāo* (*Portax tragocamelus*, the Indian representative of the *Elands* and the *Koodoos* of Africa), I cannot but take that to be the animal intended. In the *Smritis* an animal is named the *Nilabrisha*, an exact synonym, of *Nilgāo*; (*Eshṭavyā vahavah putrāḥ yaḍyapyeko gayām vrajet, yajeta vās'va-medhena nīlam vā vṛishamut-srijet*;) but curiously enough it is described to be a "bull with a red body, white hoofs and horns, and a yellow muzzle and tail:" nothing blue, though it is named a "blue bull!" (*lohito yastu varṇena mukhe puchche cha pāndurāḥ, setaḥ khuravishānābhyām sa nīlo vṛisha uchyate. Suddhitattva*, 211). To account for this inconsistency, I suppose, *Raghunandana*, the author of the *Suddhi*, and the *Vṛishotsarga Tattvas* knew not the animal, and confounded his authorities. The *Nilgāo*

is not common in Bengal, and therefore not likely to be familiar to a Pandita.

"Of deer, most names, which were originally specific, have since become generic, and it is difficult now to identify them. In the Kálíká Purána, quoted by Rájá Rádhákánta, nine different animals are described to be feral deer (jángala). Of these the first, *Hariṇa*, is said to be "copper-coloured;" 2nd, the *Eṇa* "black;" 3rd, the *Kuranga* "light copper-coloured, and of the shape of, and as big as, the *hariṇa*;" 4th, the *Rishya*, "an animal with a blue scrotum, generally known by the name of *Saroru*;" 5th, the *Prishata*, "white spotted, and somewhat smaller than the *Hariṇa*." 6th, the *Nyanku*, "an animal with large antlers;" 7th, the *Sambara*, "identical with the great *Gavaya*" or wild-ox (*sambarogavayo mahán*, which may be made to mean the sambara is a large cow-like animal); 8th, the *Rájiva* "a deer with lines (or whirls of hair) all over its body;" and 9th, the *Múndi* or 'the hornless.'

"The first I take to be the *Cervus Wallichii* or the *Honglu* of Kashmir, an animal nearly allied to the *Cervus elaphus* or the Red Deer of Europe, the *Edelhirsch* of Germany. The second is the common antelope of Upper India (*Antilope bezoartica*) with a black body and white venter and feet. Its colour leaves no doubt about its identity; for there is no other Indian deer or antelope that is black. It is the only animal that can correspond with Professor Wilson's "white-footed antelope." Its habitat, Upper India, was well known to Manu, who describes the characteristic of the land sacred to the Aryans as that where the black antelope grazes in a wild state. Its common name is *Krishṇasāra*. The third is our *Bará Singá* (*Rucervus Duvaucoli*) which is of a lighter colour than the first. The fifth is unmistakably the *Axis* of Bengal (*Axis maculatus*), commonly known by the name of *Hariṇa*. The sixth I cannot make out, unless it be the *Ságná* of Manipur (*Panolia Eldi*), an animal never seen in the plains now, but which may have had a wider habitat in former times. The seventh is the well known *Sámber* deer, often miscalled the Indian Elk (*Rusa Aristotelis*). It is common all over cis-Vindhyan India, and, for ought I know, may be equally so in the peninsula. It yields the leather known by the name of *Sávara*, which is highly esteemed as a very pure material for bedding, and

Hindus, during mourning for parents, generally have recourse to it. Its name I take to be a corruption of Sambara. It is, of course, quite a different thing from the Chamois skin which our syces take for the true *Sábara*. I should notice that the authority quoted above confounds the Sambar with the Gayal (*Gavæus frontalis*), but if the alternative meaning given by me be accepted, the difficulty can be got over. The eighth is evidently a striped antelope, perhaps the Gazelle, but I cannot make it out. The last is the Mouse deer which of all the Indian deer tribe is the only animal which has no horns. Its congeners of Java and elsewhere, such as the *Kanchil* and the *Chevrotaia*, could not have been sufficiently known to come under the enumeration of a Parapic.

"Now for the *Rishya*, it must be evident from what has been said about the *Ena*, that it cannot be the white-footed antelope, and of antelopes we have only two others, the Ravine deer and the little *Quadricornis* that could be said to be common, and neither of these has a blue scrotum, which is said to be the peculiar characteristic of the *Rishya*. I am disposed to think, however, that Rájá Rádhákánta's reading of the *Káliká Purána* is not correct. I have been able to get hold of only one MS. of the work, and it does not give the slokas quoted, but judging from the fact of the first three animals, described in them, having the colour of their pilage noted, I think the fourth had likewise its general colour described, and not that of its scrotum. The word used is *nílándakah*, which I strongly suspect is a mislection of *Nílángakah* or the "blue-bodied;" and if this conjecture be correct, the *Rishya* would be the "blue-bodied" Nilgáo, a large, fierce and peculiarly uncommon animal, much better adapted to adorn a tale than a tame little antelope.

"The legend in the *Aitareya Bráhmaṇa* makes Ushá = Dawn assume the form of a red doe *rohít*, and Brahmá, to enjoy her society, should become a buck *rohít*;* but instead of that, he changes himself into a *Rishya*, and this circumstance suggests an argument in favour of my conjecture. The female of the Nilgáo is of a red brown colour, without any shading of blue over it, which is the

* In the version of the myth given in the *Brihad Kranyaka Upanishad* Ushá, to conceal herself, successively assumed the forms of a cow, a mare, a female ass, a she goat, a ewe, and other female animals down to a female ant, and Prajapati followed her successively in the shape of males of those animals.

peculiar characteristic of the male, and consequently appears to be of a different species from the latter. Hence it is that too different words have been used to indicate the different sexes of the same animal, instead of representing the female by a feminine affix to the masculine term. This cannot be said of any other Indian deer that I know of. The whole of my argument, however, is founded upon an assumption, a supposed mislection, which I am not in a position now to establish by reference to other MSS."

The Natural History Secretary then laid the following paper before the Meeting;

On Pandanophyllum and allied genera, especially those occurring in the Indian Archipelago; by S. Kurz, Esq.

Dr. Stoliczka, in laying Mr. Kurz's paper before the Meeting, said that the plants which are referred to *Pandanophyllum* and the allied genera belong to a very interesting group of the large family of the CYPERACEÆ. This family is usually divided into several sections, of one of which, the HYPOLYTRÆ, the present paper treats in particular.

Mr. Kurz gives a short review of the genera of this subdivision, quoting the following *Hypolytrum*, *Thoracostachyum*, *Lepironia*, *Pandanophyllum*, *Cephaloscirpus* and *Scirpodendron*. Of each of these genera, several species are described in the paper, and some of these are new to the flora of the Indian Archipelago; of others, detailed statements as to their history, etc., were recorded.

Dr. Stoliczka also drew the attention to an interesting species of a *Gordius* which Mr. Peterson brought to the meeting. The specimen was procured in Darjeeling, and was remarkable for its great thickness in proportion to the length of its body. It resembles a *Typhlops*, but is proportionally much thinner, than species of this genus usually are.

Dr. Stoliczka also stated that he has just received a long letter from the former hard working Curator of the collections of the Asiatic Society, Mr. E. Blyth, and he was sure the members would be glad to hear that Mr. Blyth still took the liveliest interest in Indian Zoology. His letter was written in a very spirited way and was full of the most valuable suggestions on Indian Ornithology and Mammalogy.

The President then laid a letter before the meeting received through Mr. H. F. Blanford from W. D. Stewart, Esq., Assistant Surgeon,

Cuttack, on Meteorological observations taken by him during the late eclipse, and remarked that the chief interest attaching to these was in the thermometric observations. At the commencement of the eclipse, 9h. 6m., the thermometer stood at $87^{\circ} 5'$; at 9h. 42m. it had fallen to 85.5; at 10h. 6m., to 84.0, after which it rose again, showing 88.0 at 11h. 29m., when the eclipse was quite over. A blackened-bulb thermometer *in vacuo* was exposed to the sun's rays, one foot from the ground; at 8h. 30m. it indicated $126^{\circ} 00'$: it was then reset and exposed to sun's rays for half an hour, when it only indicated $98^{\circ} 0'$.

The Philological Secretary then read a letter received from J. Beames, Esq., Twickenham, near London, on the proposed edition of the Poems of Chand.

"With reference to the discussion on Chand which took place at last February's meeting, at which I was present, it may interest some members to know that I have found in the Royal Asiatic Society's library two very fine MSS. of the Prithvirájá-rása, which I have commenced copying and collating. The differences between the two MSS. are slight, chiefly in the spelling which, as in all Hindi works, is very unsettled. One, which I call MS. A, is in one volume bound in kimkháb, and prefaced by a beautiful picture of Prithví Rájá in full warrior's costume. It is by a native artist, and for delicacy of execution, is not surpassed by anything of the kind I have ever seen. It contains 65 prastávs, or cantos, with the headings and conclusions in red. It was written at Kotah, and completed on Thursday, Bysakh Sudi 3rd, Sambat 1883, by order of Mahárájá Kishor Siñh, and was presented to the Society by Major Caulfield, November 3rd, 1827, which must have been very shortly after it was written. It is the work of three scribes. The first, who writes in rather a Marwári hand, has copied the first 18 prastávs, down to the end of the famous "Anangapála Dillidán." The second, who writes a large coarse hand more of a Delhi type, takes from the 19th or "Mádho Bhát Kathá" to the 36th or "Hansáyatí viváha" inclusive. The third is very unequal hand, sometimes carelessly, and sometimes very neatly written, more Marwári than No. 2, but not so much so as No. 1. It finishes the work. This is a magnificent MS., quite complete, and in perfect preservation, on thick Siálkotí paper.

"The other MS. is in three volumes, in a clear Marwári hand, on thin-

nish paper, no date, or writer's name, and contains MS. pencil notes by Col. Tod, not of much value. I am forming my text on MS. A, and noting in the margin any important variants from B. These are probably the only MSS. of the Prithvirāj in England; I have carefully searched through the India office library, but neither I nor Dr. Hall could find one there. I hope to bring out to India good materials for an *editio princeps* of Chand. I hope the Society will not let the question of the MS. which is in the Agra College drop, as I hope still to fulfil my promise to edit it. Chand's dialect, however, is very peculiar: it is the Bhatti dialect of Sirsā and Hānsi Hissār, forming the genitive often by रा , रे , and री , instead of का , &c., and abounding in unnecessary and inorganic 'anusvāras,' in which respect it approaches more to Panjabi and Sindhi.

If you think these notes will interest any one, please read them at the next meeting.'

The President then said it would be in the recollection of the members that at a recent meeting of the Society, very interesting reports were read describing the discovery of Cromlechs in the Coorg district, as well as of curious remains of pottery, and of iron implements in these enclosures. The importance of ascertaining the names given to these enclosures by the people, and thus possibly tracing their origin by tracing the origin of the terms used to describe them, if these were not modern, was then insisted on. No information on these points was given in the reports read, and he had therefore written to Mr. Bowring, the Commissioner of Mysore, requesting enquiry on these points. He had received a reply, which he would read to the Society.

Bangalore, 2nd September, 1868.

'I have the pleasure to enclose a reply from Captain Cole to the question put in your letter of August 14th. I do not think that much information is to be obtained from the Coorgs on the subject of these Cromlechs or Kistvaens, as they were till lately a very rude and illiterate race, without any reliable history, and the remains of antiquity which exist in the district seem to be known by the name which all Hindus assign to such relics, when they are at a loss to designate them properly. Nothing of value has been found in the Cromlechs; but the pottery is evidently of an ancient type, while the existence of bones in the enclosures would seem to indicate that

they were burial places. Should any reliable information be obtained, or should any interesting discoveries be made, I will write to you again.'

Captain Cole writes to Mr. Bowring as follows :—

'In reply to Dr. Oldham's queries, I have the pleasure of forwarding the following information regarding the names used in Coorg for the Cromlechs or Kistien-vaen.

I find that there are two names and two traditions regarding them. The majority call them in the Coorg dialect, *Pándu-páre*, which means the *stone* of the Pándus. The Coorg dialect, as shewn in my grammar, bears the strongest affinity through the Malayalim to the Tamul language; and in Tamul, *páre* also means a *large stone*. The Moplahs of the Malayalim country call these structures "*Pándu-porre*," and *porre* means a *small hut*. Such structures have not, I believe, ever been found in the Malayalim districts. The other name for these structures is *Pundara-mane*, or the *house of the Pundaras*, a legendary Pygmy race, sometimes confounded with the descendants of the Pándus. Both these terms have been traditionally handed down.

With regard to Dr. Oldham's opinion that these structures are more of the type of Kistvaens of Celtic Europe than of the true Cromlech or Dolmen, it appears to me that we have both in Coorg. Those found buried and consisting of a regular stone cist are doubtless Kistvaens; but I have found some with the top slab resting on two or more rough stones or boulders at each end. I have just discovered four of a remarkable type, situated in the middle of the forests about 13 miles from here towards Somwarpett. They are large stone chambers erected on the top of a low hill and on the very rock from which the slabs had been quarried. They have all entrances of a shape as shewn on *Plate 2* of the Proceedings of the Asiatic Society of Bengal for June last, or a circular hole in the centre of the slab. They stood out in high relief, each on the top of a low mound, the base of which had a circle or concentric circles of stones all round. They were perfectly empty, and looked like temples or altars; and bearing in mind what Caesar, Pliny, and Tacitus, have said of the human sacrifices offered by the Druids, and what we know of such sacrifices in India, the idea of an altar is borne out by some of these structures.

In others near Ramasammy Kunve, I have just found some beautiful small goglets in black pottery and glazed, a basin, some large urns, and a large round pot with three short pipes projecting out, as if used for

distilling. I have also found large fragments of bones, and a piece of a human jaw with two teeth in it.

I hope soon to send you the drawings and a regular report.'

Fraserpett, 29th August, 1868.

It would seem from this, that little hope existed of being able to trace out the history of these curious remains by any investigation of the names or words applied to them, which were all of modern construction.

The discovery alluded to in the last sentence of Captain Cole's note was among the most important yet made, and he had solicited that, if possible, the portion of human jaw referred to, might be forwarded to Calcutta for comparison.

The President further said, that he had brought down to the meeting a volume of the Transactions of the Literary Society of Bombay, in which a very interesting account was given of curious remains of a somewhat analogous character, which occurred a little more to the south than Coorg, namely, near the Palghat. The title of the paper was one which would scarcely lead any one merely consulting the Index to suppose that it related to such rough structures of stone of a rude and early age. It was entitled, "On the Pandoo coolies of Malabar," the word coolies here being a corruption of the word *Kul* or *Kull*, signifying a stone. He did not mean to refer to the interesting details given in the paper, but simply to direct attention to the plates which accompanied it, and which gave excellent representations of the pottery, glass beads, iron implements, &c., found in these Kulls, and of the mode in which they were originally placed in them. The remarkable fact was, that there was not among them a single object, which could not be paralleled by objects similar or even identical in shape, material, &c., found in many places in Northern Europe. The character of these articles would indicate a time more advanced in the arts and in civilization than those of the people who constructed the Cromlechs and Kistvaens of Coorg. But it did not necessarily follow from this, that they were of later date. Two tribes, or even portions of the same race, might readily have existed contemporaneously, but in very different stages of progress in the arts, &c.

The President then said, he had much pleasure in laying before the Meeting a paper by Mr. F. S. Growse, C. S., Fatigurrh, on *the Poems of Chand*, of which communication the Philological Secretary would only give a short abstract, as it was to appear in full in the Journal.

Bábu Rájendralála Mitra said :—

“After adverting to the circumstances which led to the enquiry regarding the Agra MS. of Chand's Poems, the author gives, first, a brief account of the size, extent, and character of the Agra MS., and then of another lent to him by Bábu Sivaprasad of Benares from the Library of His Highness the Mahárájá of Benares. The latter comprises 786 pages, and appears to be a continuation of the work noticed in the July Number of the Society's Proceedings. It is divided into two parts, one of which is devoted to Mahoba, and the other to Kanouj, and contains altogether 38 Cantos. The narrative is described to be “very abrupt in its transitions,” and laconic in its allusions to past events; the language most archaic, and the text exceedingly corrupt. This is followed by a translation of the first Canto of the work, giving an account of the origin of Rájá Chandra Brahma. The story opens with Rájá Ananga Pál's causing at the suggestion of Vyása an iron spike to be driven from the surface of the earth down to the head of Vásuki, the great serpent which supports the sphere on its head. The belief was that as long as the spike would remain in its place, so long would the sovereignty of the Tomars last on earth. But Vásuki, pained by the spike, sent his brother Takshak to cheat the king, who caused the spike to be pulled out, and found that its end was smeared with blood. This is followed by an account of Vyása's foretelling how the sovereignty of the Tomars would be overthrown by the Muhammadans, and then an account is given of a deception practised by the moon on a Brahmin woman, named Hemaváti, and the issue thereof. The paper concludes with an extract from the Poem, as a specimen of Chand's style.”

The Secretary announced the receipt of the following communications :—

The Poems of Chand, by F. S. Growse, Esq., C. S., Fatigurh.

On Pandanophyllum and allied genera, by S. Kurz, Esq.

LIBRARY.

The following books have been added to the Library since the last meeting :—

. Names of donors in capitals.

Presentations.

Proceedings of the Royal Society, Vol. XVI. No. 103.—THE ROYAL SOCIETY OF LONDON.

Proceedings of the Royal Geographical Society, Vol. XII. Nos. 2, 3, and 4.—THE ROYAL GEOGRAPHICAL SOCIETY OF LONDON.

Bulletin de la Société de Géographie, Juillet, 1868.—THE GEOGRAPHICAL SOCIETY OF PARIS.

Actes de L'Académie Impériale des Sciences Belles-Lettres et Arts de Bordeaux, 3rd Série, 29th Année, 1867.—THE IMPERIAL ACADEMY OF BORDEAUX.

Abhandlungen für die Kunde des Morgenlandes, herausgegeben von der Deutschen Morgenländischen Gesellschaft, Band V, No. 1.—THE SOCIETY.

Zeitschrift der Deutschen Morgenländischen Gesellschaft, Band XXII, Heft I, II.—THE SAME.

Mémoires de L'Académie Impériale des Sciences de St. Pétersbourg, 7th Série, Tome XI, No. 918.—THE IMPERIAL ACADEMY OF ST. PETERSBURG.

Bulletin de L'Académie Impériale des Sciences de St. Pétersbourg, Tome XII, Nos. 2—5.—THE SAME.

Proceedings of the Third Annual Meeting of the Scientific Society of Alligurrh.—THE SCIENTIFIC SOCIETY OF ALLIGURH.

Tárikh i Hindustan.—THE SAME.

Report of the Canning Institute for the Sessions 1866—1868.—THE CANNING INSTITUTE.

Les Auteurs Hindoustanis et Leurs ouvrages, d'après les Biographies originales par M. Garcin de Tassy.—THE AUTHOR.

Nachtrag Ueber die Phonetik der Tibetanischen Sprache, von Dr. H. A. Jäschke.—THE AUTHOR.

Grecian Anthropology, by Dr. J. B. Davis.—THE AUTHOR.

A Birmese Hand Book of Medicine by Dr. F. Mason.—THE AUTHOR.

Ueber die ursprüngliche Bedeutung des Wortes Brahma, by Dr. M. Haug.—THE AUTHOR.

Report on Past Famines in the North-Western Provinces by C. E. R. Girdlestone.—THE CURATOR GOVERNMENT BOOK DEPOT, NORTH-WESTERN PROVINCES.

Report on the Annual Examination of the Thomason College, Roorkee, 1868.—THE PRINCIPAL, THOMASON COLLEGE.

Rámáyana, Vol. I, Part I, edited by Pandita Hemachandra Bhat-tacharya.—THE EDITOR.

The Calcutta Journal of Medicine, Vol. I, No. 7.—THE EDITOR.

Report of the Insane Asylums in Bengal for 1867.—THE GOVERNMENT OF BENGAL.

Report on the Administration of the Central Provinces for 1867-68.—THE CHIEF COMMISSIONER OF THE CENTRAL PROVINCES.

Selections from the Records of the Government of India, Home Department, No. LXIV.—THE GOVERNMENT OF INDIA, HOME DEPARTMENT.

Selections from the Records of the Government of India, Foreign Department, No. LX.—THE GOVERNMENT OF INDIA, HOME DEPART.

Purchase

Revue des Deux Mondes, July and August, 1868.

Revue Archéologique, Juillet, 1868.

Revue et Magasin de Zoologie, Nos. 6 and 7, 1868.

The Annals and Magazine of Natural History, No. VIII. 1868.

Journal des Savants, 6 and 7, 1868.

Comptes Rendus, Tome LXVI. Nos. 24—26, and Tome LXVII. Nos. 1—4.

The American Journal of Science, Nos. 134 and 135.

Pratna Komra Nandini, Nos. 13 and 14.

Reeve's Conchologia Iconica, parts 272 and 273.

Hewitson's Exotic Butterflies, part 67.

Böhtlingk and Roth's Sanskrit Wörterbuch.

Thomas' Sassanian Coins.

Spencer's Principles of Biology, Vols. 1 and 2.

Spencer's First Principles.

Spencer's Essays, Vols. 1 and 2.

Spencer's Social Statistics.

Spencer's Education.

Dr. F. Watson's Index to Names of Eastern Plants and Products.

Elliot's History of India, Vol. I.

Exchange.

Athenæum for July, 1868.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,

FOR NOVEMBER, 1868

Pursuant to notice to that effect, a Special General Meeting of the Society, was held on the evening of the 4th of November, 1868, at 9 o'clock P. M.

T. Oldham, Esq., LL. D., in the chair.

The President said, it would be quite unnecessary that he should enter into any detailed history of the long protracted correspondence, and discussions which had led to the result they were asked to ratify by their votes this evening. He would not detain them by any reference to earlier parts of this history, but simply state that, at the beginning of 1864, there appeared a fair prospect of final success, and by a general vote of the Society at large, the Council were then fully authorized to treat with the Government of this country, in accordance with the general terms set forth in the correspondence then submitted to the Members. Armed with this authority the Council had treated, and had finally brought the contract to an issue, which he might, without hesitation, say was highly advantageous to the Society.

The arrangement was very briefly this. The Society hand over to Trustees, appointed under the Act of the Legislative Council of India, which embodies these arrangements, (Act XVII. of 1866), the collections which they now possess of Natural History, of Antiquities, and of Miscellaneous objects, as well as any additions thereto which they may obtain. The Government undertake to erect a commodious building, specially adapted to the purpose, to provide for the payment and maintenance of an efficient staff of curators, taxidermists, &c., and

for all costs of the management of such Museum. All the collections of the Society as well as additions, are to be marked with a distinctive mark, so that if, unfortunately, any severance of the Society and of the Museum should be necessary, the Society could reclaim all such collections of its own as were then existent. To the Society also has been granted the right of nominating four Trustees out of thirteen, thus giving to this body a very powerful interest in the management of the Trust. In this way, the Council have been able to secure the permanent maintenance in this city of a Museum, in some degree worthy of the name, of which the collections of the Asiatic Society form the most important nucleus: they have secured these most valuable collections from the destruction which from the want of proper room or sufficient funds for their maintenance was rapidly seizing hold of them; and the Society has at the same time been relieved from all or any expenditure for this purpose.

Further, the Society retain their valuable library intact; their collections of coins, of manuscripts, engravings, maps, &c., and the paintings and busts which ornament their rooms. Such is the agreement. In full confidence that they would, under the circumstances, meet the ready support of the Society at large, they have further provisionally handed over the collection to the charge of the Trustees nominated under the Act. It was impossible to do this formally, at once, because the Act required that careful lists of all the specimens should be prepared, and that one copy of such lists or inventories should be kept by the Council of the Asiatic Society, and another should be kept by the Trustees of the Indian Museum. These inventories or Catalogues, have lately been completed with much zeal and great personal exertion by Dr. Stoliczka and Mr. V. Ball, both members of the Society, who have also lately been acting as Curators of the Museum. And the Council have therefore now demanded of the members at large, that this transfer should be formally sanctioned.

The necessary voting papers were issued to the Mofussil members on the 22nd August, 187 were sent out, 61 replies have been received. Of these, *one* only votes against this transfer.

I will now propose on the part of the Council, 'That the Council be authorized formally to transfer the Society's collections of Natural History, Antiquities and Miscellaneous objects, to the Trustees of the

Indian Museum appointed under Act XVII. of 1866, subject only to the conditions therein specified.'

This was put to the vote and passed.

The Meeting then resolved itself into an Ordinary Monthly Meeting. The minutes of the last meeting were read and confirmed.

The following presentations have been received since the last meeting.

1. From the Government of India, Home Department—

A copy of Notes on the Races and Tribes of Avudh.

2. From Babu Gopinátha Sena.

A copy of the monthly means of the principal meteorological elements, &c., as recorded at the Surveyor General's Office, Calcutta, for 1866-67.

3. From the Magistrate of Mainpuri—

A copper spear head.

Two copper axes.

A few copper bangles.

The following letter accompanied the donation :—" The Magistrate of Mainpuri begs to inform the Secretary, Asiatic Society, that he has despatched to him to-day some specimens of copper weapons or utensils which were found in this district buried in a field, and will be much obliged, if the Secretary will inform him if he can state what they are. They do not resemble any weapon or utensil now in use in this part of the country."

The President in exhibiting these implements remarked on the extreme interest attaching to them. One was a very fine specimen of a flat celt, identical in shape and general character with many found in North Europe. The material of this, he believed, was, as stated, copper; there had been no time to test the presence of other metals, but judging both from the colour and softness of the metal, as well as the colour of the coat of patina on the specimen, he thought it was copper. Another of the specimens appeared to be a spear-head of peculiar form; the sides of the implement being cut into a series of pointed teeth, pointing downwards, and projecting from the central rib, somewhat in the way in which the teeth of a saw-fish do. With these were a number of rings, which were, he thought, obviously old

bangles, or wristlets ; but these were identical in form with what for very many years, antiquarians in North Europe had been wont to call 'ring-money.' There was also another flat piece of metal, the use of which was not so obvious.

The great interest attaching to these specimens was this—that, so far as he was aware, this was the first instance in which the occurrence of any such implements composed of either copper or brass or bronze was known in this country. There is a record of one instrument of brass or bronze, which was believed to be in the Society's collection, but which he had not been able to find, but, with this exception, there was no record of any such instruments of bronze or copper, known, as from any part of India.

The only statement which the sender had given as to the circumstances under which they were found was, that they were "buried in a field near to Mynpoorie." More detailed information had been sought, and if obtained would of course be laid before the Society. He would also have the instruments tested as to whether they were really of copper.

4. From J. Kertich, Esq., Government School-master, Prome, through Dr. J. Anderson—

A palm leaf Burmese manuscript, the life of Gautama, written 40 years ago

A palm leaf Burmese manuscript, Wise sayings of Kandouweng Priest.

A palm leaf Burmese manuscript, One of the 550 Zat-lives of Wee-too-rah.

The following gentlemen duly proposed and seconded at the last meeting were balloted for as Ordinary members :—

Captain W. A. Holroyd, Director P. I., Panjab.

J. Pearson, Esq., Inspector of Schools, Panjab.

Lieutenant H. H. Cole, R. E.

J. Geddes, Esq., C. S., Magistrate and Collector, Chittagong.

The following gentlemen are candidates for ballot at the December meeting :—

J. B. Macauliffe, Esq., C. S., Multan, proposed by the President, seconded by Dr. Ewart.

J. E. Cooke, Esq., Deputy Accountant General, Bengal, proposed by J. T. Wheeler, Esq., seconded by the President.

The President laid on the table, the report of a Sub-Committee appointed to revise the rules of the Society. The Members were aware, as it had been announced to the Society, that a Sub-Committee had been appointed, and that to it, some propositions which had been made for alteration in some of the rules, had been referred for consideration with the general subject. This Committee, composed of two Members of the Society not Members of Council, and two Members of Council, had held successive meetings, and had considered the rules *seriatim*, as well as generally, and their careful and detailed deliberation had resulted in drawing up a revised set of rules, in which the principal alterations were alterations of arrangement, with also some changes in principle. The Committee had met frequently, and on successive days, with a view to completing the important duty confided to them at the earliest practicable date, and they submitted their report sometime since. But, the intervention of the holidays, and the consequent absence from town of many Members of the Council, had rendered it impossible to have, in the Council, that full and careful discussion of the proposed rules which was, in every point of view, desirable. The Council had gone through a portion of these proposed rules, and had made several changes, so far he might say chiefly verbal changes. And it was wished that the Council's report could have been laid before the meeting this evening. This was as he said impossible. It was therefore determined by the Council at its last adjourned meeting on the subject, held only the day before, to lay before the meeting the draft rules as proposed by the Committee, and ask the Society to allow the question to be brought up for final discussion at the Annual General Meeting. This meeting would not take place until the middle (or a little later) of January. And it was believed that there would be ample time to have the final report of the Council on these draft rules ready, quite in time to be circulated to the Mofussil members, so that the required two months shall elapse after the issue of the papers, before the Annual General Meeting.

It was of essential importance that this matter should be brought to a conclusion as soon as practicable, not only with a view to removing doubts as to what the rules of the Society are, but for another reason also. The copies of the rules as now existing are exhausted; there are none to give to the new Members of the Society, while it would be

highly foolish to waste money in reprinting these rules, if they are to be supplanted by others in a few weeks. If the final decision, however, is to be protracted much beyond the date of the Annual Meeting, the present rules must be reprinted.

He would, therefore, ask the Society to adopt the plan recommended by the Council, under which the rules as proposed would be circulated for discussion in full time to hold the final voting on the question at the Annual Meeting in January.

This was put to the vote and carried.

The President then called on Mr. V. Ball to read his paper, *On the Flora of Mámbhúm*, of which the following is an abstract.

Previous knowledge of the Flora of Mámbhúm refers only to the northern portion of the district (in the vicinity of the grand trunk road), which has been visited by Dr. Hooker, Dr. T. Anderson, and others.

The district forms portions of three of Dr. Hooker's botanical provinces Behar, Bengal and Orissa.

The physical characters of Mámbhúm which exercise a marked influence on the flora, may be most clearly comprehended by dividing the district into a series of six zones.

The general aspect presented by the flora is disappointing: instead of finding a realization of one's ideal of a tropical jungle, the scenery is often excessively tame, and in the drier and cleared portions, almost park-like.

In the nearest approach to typical tropical jungle, that occurring on the hills of the Dhalbhúm frontier, there are no tree-ferns or palms and but few mosses, orchids, or herbaceous ferns. The character of the foliage and inflorescence are briefly described in the paper.

The vegetation of the low flat lands is susceptible of a four-fold division, according to the character of the ground which supports it; lists of the characteristic species are given.

Land which has been cleared for cultivation, it is remarkable to notice, has a flora of its own, both the trees and herbaceous plants being quite distinct from those found in the original jungle. Although the land may relapse into jungle, the occurrence of these species marks its antecedents.

The flora of the tanks and jheels is interesting, as it so closely approaches in character to that of the ponds and lakes of Europe. A list of the species is given.

This portion of the paper is concluded with a description and list of the plants peculiar to the hills. The useful plants are those yielding, food, drugs, fibres, dyes, lac, oil and timber.

The paper concludes with notices under these several headings, and a list of trees producing timber of known value.

Dr. F. Stoliczka then read his paper on *The Malacology of Lower Bengal and the adjoining provinces*. No. 1. On the genus *Onchidium*, with descriptions of new species. (Abstract.)

The author stated that the study pursued in conchology during the last few decades had clearly shewn the importance of the examination of the animals of Mollusca for all systematical purposes. The Indian land and fresh water shells received a very fair attention from such able conchologists as Mr. Benson, Mr. W. Blanford, and others; but there was as yet little known of the respective animals. To supply this want, Dr. Stoliczka stated that he had undertaken to collect materials for a series of papers, which would be specially devoted to the examination of the animals, and that he hoped conchologists would appreciate this course of inquiry, and favour him with living or preserved animals of Molluscs.

The first of the series of papers had as subject the anatomical and other descriptive details respecting the species of *Onchidium*, found in the neighbourhood of Calcutta.

The type of the genus was described about 70 years ago by Dr. F. Buchanan as *Onchidium typha*, which is very common about Calcutta, though no record of its occurrence has been noticed since Buchanan's publication.

Dr. Stoliczka then spoke on some of the most important anatomical details of the type species, *Onchidium typha*, pointing out some of the errors into which former observers had fallen. He also stated that he found in the neighbourhood of Port Canning three new species which were described by him under the names of *Onchidium pallidum*, *tigrinum*, and *tenerum*. Several live specimens of the last named species, the drawings of all the species, and preparations of the teeth, &c., were exhibited. A new species of *Onchidium* was said to occur

in Burmah. Of the closely allied genus *Vaginulus*, Mr. W. Theobald had described one species from Burmah, and Mr. G. Nevill lately obtained near Calcutta two small specimens of apparently the same species.

Mr. W. Blanford said that the study of the animals of the various Molluscs and especially those of *Onchidium*, was of the highest importance, and that he had no doubt that Dr. Stoliczka's labours in this line would be highly appreciated by conchologists. He had himself observed, he believed, at least two Indian species of *Onchidium* beside those mentioned by Dr. Stoliczka. All the *Onchidia* were found along the seashore or on the banks of tidal rivers, while the species of *Vaginulus* appeared to be terrestrial animals.

Dr. Stoliczka mentioned that the errors which had been made by former observers were chiefly due to the difficulty in preserving animals. Since Dr. Buchannan, only very few naturalists had the opportunity of examining live animals, and those preserved in spirit easily change their form so much, that it was extremely difficult satisfactorily to trace out the structure and the position of some of the internal organs.

Dr. Stoliczka also brought to the notice of the Meeting a paper entitled "*Remarks on the species of the genus Pandanus*;" by S. Kurz, Esq.

The object of the paper was a somewhat different grouping of the species of *Pandanus* from that recorded in botanical works up to the present date. Mr. Kurz divides the known species of *Pandanus* into five sections,—which may be said to have sub-generic value,—under the names *Acrostigma*, *Ryckia*, *Keura*, *Microstigma* and *Souleyetia*. Short characteristics of the various sections are given, and 27 species are enumerated in his list.

Papers received from the Public Works Department, reporting the occurrence of earthquakes in June last, were laid before the Society.

The Superintending Engineer of South-East Circle, Mr. Leonard, reports that "A shock of earthquake was felt at Sylhet at a few minutes past 12 o'clock, on the morning of the 30th June (29th-30th). There were three waves, rather abrupt, the second so much so as to shake the furniture." The shocks occupied about half a minute, and a tremulous motion continued for half a minute more in the direction of west-south-west to east-south-east. Slight shocks were also felt at

Cachar at 8 o'clock in the evening of the 29th June, and at 3 A. M. of the following morning, lasting each time 4 to 5 seconds ; but causing no damage.

The Executive Engineer of Rajshahai division reports an earthquake at Dinagore on the same night at about the same hour, (midnight) as at Sylhet. It lasted for about a minute and three distinct shocks were felt. The motion travelled from north-east to south-west. It was felt also slightly at Rampore Bauleah, Malda, Nattore, Boggrah, Pubnah and Rungpore. No damage was caused to the buildings. It is also stated to have been "perceptible at Berhampore, but that few seem to have felt it."

Another earthquake is reported as occurring on the 31st July, at about 11h. 45m. in the day. It was felt at Hazareebagh, where it is said to have lasted 10 seconds, and appeared to come from the north, or north-east. It was slightly felt also at Raneegunje. It appeared more severe at Gobindpore, where the main wall of the Assistant Commissioner's Cutcherry was cracked, and the plaster fell off several of the pillars in the verandah. One of the walls of the 1st class road chokee at Kundra was cracked. Near Bugodhur, it was very perceptibly felt at about 11 A. M. At Aymiahghat all the constables rushed out of the police building. It was felt also at Burrakur. It is stated to have been preceded and accompanied by a loud noise resembling the distant noise of an engine letting off steam, and is stated to have come from north-east toward the south-west.

Nothing unusual in the state of the weather or temperature is recorded.

The receipt of the following communications was announced :—

I.—*Notes on the Flora of Mánbhúm*, by V. BALL, Esq., B. A.

II.—*The Malacology of Lower Bengal*, No. 1, by Dr. F. STOLICZKA.

III.—*Remarks on the genus Pandanus*, by S. KURZ, Esq.

LIBRARY.

The following additions have been made to the Library since the last meeting.

. Names of Donors in Capitals.

Presentations.

Sitzungsberichte der Königl. Bayer. Akademie der Wissenschaften zu München, 1867, Heft III. IV.; 1868, Heft I—II.—THE KOENIGLICH BAYERISCHE AKADEMIE DER WISSENSCHAFTEN ZU MÜNCHEN.

Abhandlungen der Philosophisch-Philologischen classe der Königlich Bayerischen Akademie der Wissenschaften, Band XLII.—THE SAME.

Abhandlungen der Historischen classe der Königlich Bayerischen Akademie der Wissenschaften XXXVIII. Band.—THE SAME.

Denkrede auf Heinrich August von Vogel.—THE SAME.

Almanach für das Jahr 1867.—THE SAME.

Ueber die Theorien der Ernährung der thierischen Organismen.—THE SAME.

Ueber die sogenannte Leukothoa in der Glyptothek Sr. Majestät König Ludwig I.—THE SAME.

Abhandlungen für die Kunde des Morgenlandes; Versuch einer hebräischen Formenlehre.—PROFESSOR DR. L. KREHL.

Actes de La Société D'Ethnographie, 2e Serie, Tome I—II.—THE ETHNOGRAPHIC SOCIETY OF PARIS.

Mémoires de L'Académie Impériale des Sciences, Belles Lettres & Arts de Lyon, Classe des Lettres, Tome XIII.—THE IMPERIAL ACADEMY OF LYON.

Journal Asiatique, No. 42.—THE ASIATIC SOCIETY OF PARIS.

Bulletin de la Société de Géographie, Juillet, 1868.—THE GEOGRAPHICAL SOCIETY OF PARIS.

Journal of the Royal Geographical Society Vol. XXXVII.—THE ROYAL GEOGRAPHICAL SOCIETY OF LONDON.

Transactions of the Linnean Society, Vol. XXVI. Part I.—THE LINNEAN SOCIETY OF LONDON.

The Journal of the Linnean Society, Zoology, Nos. 36 - 41 and Botany, Nos. 39—47.—THE SAME.

Proceedings of the Linnean Society, November, 1868.—THE SAME.

General Report of the North-Western Provinces Exhibition held at Agra, February, 1867.—GOVERNMENT NORTH-WESTERN PROVINCES.

Memoirs of the Geological Survey of India, Palæontologia Indica, Vol. V. No. 6.—GOVERNMENT OF BENGAL.

Adam's Reports on Vernacular Education in Bengal and Behar.—THE SAME.

Annual Report on the Geological Survey of India, Calcutta.—THE SAME.

Annual Report of the Administration of the Province of Oudh for 1866-67, 1867-68.—THE SAME.

Ditto ditto ditto of Coorg for 1867-68.—THE SAME.

Ditto ditto ditto of the Penal Settlement, Port Blair and Andaman Island for 1867-68.—THE SAME.

Administration of the Central Provinces for 1867-68.—THE SAME.

Revenue Administration of Mysore for 1866-67.—THE SAME.

Annual Report on the operations of the Post Office of India for 1866-67.—THE SAME.

The Annals of Indian Administration in the year 1866-67, Vol. XII. Parts I. and III.—THE SAME.

Selections from the Records of the Government of India, Foreign Department, Nos. LXV. LXVI.—THE SAME.

Report of the Meteorological Reporter to the Government of Bengal for 1867-68.—THE SAME.

Report on the Races of Avadh.—THE GOVERNMENT OF INDIA.

Purchase.

Revue des Deux Mondes, 15th August, and 1st September, 1868.

Comptes Rendus, Nos. 5, 6, 7 and 8.

Journal des Savants August, 1868.

Revue Archéologique, No. VIII. 1868.

The Numismatic Chronicle, 1868, Part II.

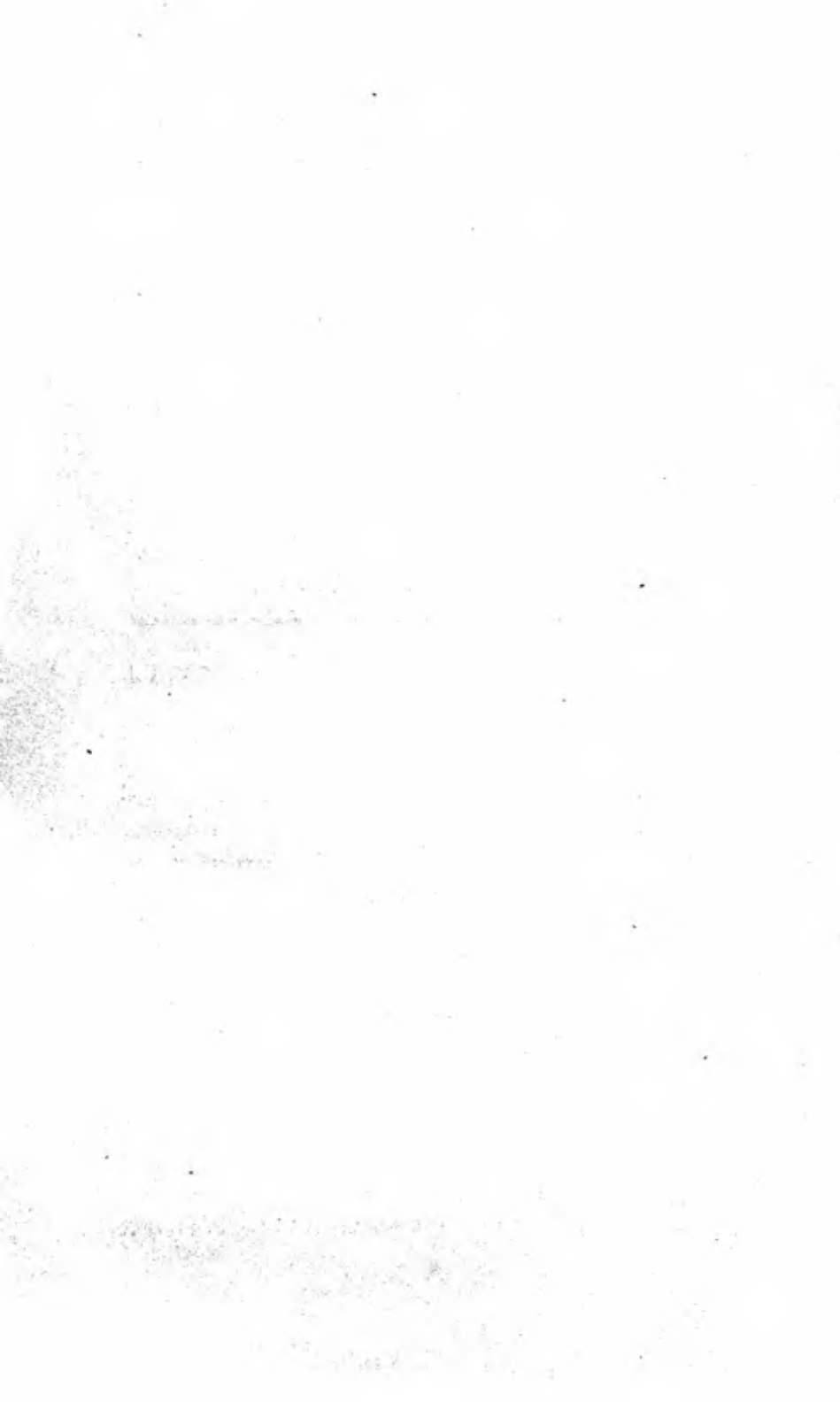
The Annals of Natural History, No. IX. 1868.

Revue de Zoologie, No. 8, 1868.

Essai d'une Faune Entomologique de L'Archipel Indo-Néerlandais par S. C. S. Van Vollenhoven. III, 1st part. Famille des Pentatomides.

H. Fauche's Le Mahābhārata, Vol. IX.

Simpson's India, Ancient and Modern, Part II.



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,

FOR DECEMBER, 1868.

An Ordinary General Meeting of the Society was held on Wednesday, the 2nd Instant, at 9 o'clock P. M.

T. Oldham, LL. D., President, in the chair.

The minutes of the last meeting were read and confirmed.

The following presentations were announced —

1. From C. W. Wilmot, Esq. Rajmahal, *a piece of sandstone with leaf impression of Palæozamia.*

2. From J. A. Cockburn, Esq., Superintendent, Barrackpore Park, *a specimen of Python Molurus.*

3. From the Rev. E. Stewart, *A copy of Santali grammar, and a copy of the Gospel of St. Matthew in Santali.*

4. From J. Burgess, Esq., Poonah, *Notes on a visit to the Satrunjaya Hills.*

5. From the Surveyor General's Office, *two maps of Turkestan with the adjoining portions of the British and Russian Territories.*

The following gentlemen duly proposed and seconded at the last meeting, were balloted for and elected Ordinary Members :—

M. Macauliffe, Esq., C. S.

J. E. Cooke, Esq.

The following gentlemen are candidates for ballot at the January meeting :—

Dr. P. F. Bellew, Deputy Assay Master, Calcutta Mint, proposed by Col. H. Hyde, seconded by Mr. J. F. Wheeler.

A. Cadell, Esq., C. S., Mozuffernagur, proposed by Mr. Irwine, seconded by the Secretary.

Ch. C. Adley, Esq., Executive Engineer, P. W. D., proposed by the President, seconded by the Secretary.

Dr. T. Dukas desires to withdraw from the Society.

The following letter from B. W. Colvin, Esq., Magistrate of Mainpuri, with reference to the copper weapons, laid before the last Meeting, was read :—

7th November, 1868.

“The copper weapons mentioned in your letter of the 5th instant, were found by a cultivator, whose plough struck against them in passing through his field.

“He described them to me as lying littered together in a heap without order, and not enclosed in any vessel or receptacle. They were, of course, at no great depth below the surface.

“This is all the information I could gather from the man who found them. I have not had an opportunity yet of visiting the place myself where they were found, but I shall have shortly; and if you will let me know any special points on which further information is desirable, I will do the best I can to procure it.”

The receipt of the following communications was announced—

1. *What was the Sundarbun originally, and when, and wherefore did it assume its existing state of utter desolation?* by H. J. Rainey, Esq.
2. *On the Results deducible from the observations made by order of the Secretary of State for India, at Guntoor, on the late Eclipse of the Sun,* by Major J. F. Tennant, R. E., F. R. A. S.
3. *Notes on a Tour in Northern Abyssinia, and specimens collected in Abyssinia,* by W. T. Blanford, Esq.
4. *The Total Eclipse of the 18th August 1868, observed by the Austrian Expedition,* by Dr. F. Stoliczka.
5. *Description of New Marine Mollusca from Ceylon,* by Messrs. G. & T. Neville.

Mr. Blochmann then said—

Among the books purchased during last month, by the Society, there is a copy of a Persian Dictionary, entitled *Sirájullughát*, in two volumes. This Dictionary was compiled in 1734, by Sirájuddín 'Alí Khán Arzú, a poet and noble of the court of Dihli. The Society, I think, has been fortunate in getting this rare book at the low price of Rs. 45. The copy itself is but fair, like the MS. of this work

preserved in the Fort William College Library. A third copy is at Lucknow.

"I have on several occasions drawn attention to the importance of collecting MSS. of Persian lexicographical works. There is a two-fold reason. *First*, the authors of the best dictionaries are Indians, and few of their works have found their way into the libraries of Europe. *Secondly*, the best Persian dictionaries are written towards the end of the 17th and during the 18th centuries, when the rapid downfall of the Mogul dynasty, and the introduction into India of the art of printing, caused a considerable decrease in the demand for copyists. Hence the fact that our libraries contain more MSS. written from the time of Akbar to Sháhjahán, than MSS. written during the 18th century. Adding to this the difficulty of copying voluminous dictionaries, we cannot wonder that lexicographical MSS. are now-a-days, even in India, where they were written, exceedingly rare.

"Of the 53 dictionaries which during thirty years were collected by order, and at the expense, of the Emperor Akbar, for the compilation of the dictionary entitled *Farhang i Jahángíri*, about eight still exist, of which our Society has but three. So rapid has been the destruction of this class of MSS. during two and a half centuries."

Dr. Stoliczka desired, before the ordinary business was commenced with, to draw the attention of the Meeting to a few very fine specimens of the remarkable coral *Sagartia Schilleriana*. He stated that he had lately found large numbers of that species in the Mutlah river, where, during low water, the animals remain for many hours exposed to the sun.

Dr. Stoliczka also exhibited live specimens of *Nanina pollux*, and *Helix propinqua*, both clearly shewing the pulsations of the heart. In the former species, the pulsations were about 46 *per minute*; in the latter about 50. When the animals retire for a longer time to their shells, the pulsations greatly diminish. In the case of *Helix propinqua*, they were reduced from 50 to 17 *per minute*.—

The President then asked the Secretary to read the first paper announced for the evening.

What was the Sundarban originally, and when, and wherefore did it assume its existing state of utter desolation? By H. J. RAINEY, Esq., Khowlnah, Jessore. (Abstract.)

The writer states that he advisedly adopts this interrogative form of title, desiring to elicit information rather than to attempt to dogmatize. His wish is to ventilate the subject, so that a satisfactory solution may finally be arrived at. Such a solution he believes would be of practical value also as affecting the extent and character of the various works for reclamation or improvement of the Sundarban.

The author then proceeds to shew that the Sundarban "originally" was not only populated, but apparently equally, if not more, advanced in civilization than the country lying immediately to the northward of it. The remains of temples, mosques, and other buildings of much symmetry and even magnificence, are supposed to prove this. These appear to have belonged to both Hindus and Musulmans, though the latter predominate.

It then proceeds to discuss the history, so far as known of this tract. In the reign of Akbar, (16th century) "Mahárájah Pratápá-ditya established a magnificent city (founded by his father and uncle, Mahárájah Bikramaditya and Rájah Bosontori respectively) in the grant of one Chand Khan, (who dying without heirs, his property was escheated by the paramount power, Nawáb Dáúd, and transferred to the said Mahárájah and Rájah,) in what may now be considered the 24-Parganah portion of the Sundarban, then appertaining to Jessore. This Mahárájah Pratápá-ditya became so powerful as to exercise sway over all the Rájahs of Bengal, Behar, and Orissa, including even Assam. His great successes induced him to refuse to pay his tribute, and to throw off his allegiance to the Great Mogul. For many years, he succeeded in defeating the armies sent against him. The first general sent was Abram Khan, whose army was nearly annihilated near the fort of Mutlar (? Mutlah, now Port Canning)*. Twenty-five other generals are stated to have been

* "The high embankment, or rather the remnant of it left, not far from Canning, is very likely the remnant of the road which led to this fortress; or probably debris of the fortification (or *garb* as termed by the natives); for such appear in Lower Bengal to have been built simply of mud."—*The Author*.

The general Abram (?) Khán is not mentioned in the histories of Akbar's reign. For the facts mentioned in the following sentence the author should have specified his sources.—THE GENERAL SECRETARY.

defeated in succession. Finally the Mahárájah Pratápáditya surrendered himself a prisoner, and was sent to Delhi in an iron cage. He died at Benares on the way.

The author shews that at the time of Pratápáditya, though parts of the Sundarban were populated, a great portion was still wild and uncultivated, and thinks, the vast progress in improvement was owing to the great exertions of these princes; and that the impetus given by them, gave way with the imprisonment and death of the Mahárájah. Subsequently only the very best and most favorably placed portions of the district were cultivated. In addition, the place was exposed to predatory incursions of piratical Mugs, and even of Portuguese Buccaneers,—quite sufficient to scare away a timid and probably disunited population.

There remain yet to be considered the effects of a cyclone, and its storm-waves. This occurred in Calcutta in 1737, when a wave 40 feet higher than usual, came up. Such would have been sufficient to produce an almost total loss of life in the Sundarban, and its consequent abandonment.

The author thinks the true name is Sundarban, or beautiful forest, as preferable to Sundriban, Soondree forest; or Sundar band, beautiful *band* or embankment; or Somudro ban, the Sea Forest. He thinks the name is of recent origin as applied to the entire district. A record exists of many well-known places described as belonging to zemindarees.

The author concludes by briefly summing up his views, and stating that the country suffered severely from the attacks of Mug pirates and the Portuguese, who finally effected a footing in the country, and that a terrific gale or Cyclone, probably that in A. D. 1737, accompanied by a storm-wave, passed over that tract of country on the sea-board, now known as the Sundarban, resulting in the most awful destruction of lives, and devastation of properties, which caused the few remaining survivors to totally abandon the place, and move northwards, where finding sufficient surplus land for their habitation and cultivation, they never returned to the south.—

The President then invited discussion on the paper.

The Rev. J. Long stated that when in Paris in 1848, Monsieur Jomard, the head of the Geographical Department of the Bibliothèque

Royale, shewed him a Portuguese Map of India more than two centuries old in which the Sundarban was marked off as cultivated land with five cities therein. This was confirmed by a Map in De Barros' *Da Asia*, a standard Portuguese history of India. The libraries of Portugal would be worth searching for further information.

He had twenty years ago examined Tarda, a town not far from Port Canning, which was the port of the Portuguese before Calcutta was founded; it was once an emporium of trade, and ships must have sailed up by the Mutla, but no ruins now remain. He had seen, 40 miles south of Port Canning, a fine Hindu temple two centuries old.

At the request of the Hon'ble J. Colvin, late Lieutenant-Governor of the North West Provinces, he had published, 16 years ago, in Bengali the life of Rájah Pratápáditya, called in the original "the last king of Saugor Island;" he lived in the days of Akbar, and built a city in the Sundarban, the remains of which are to be found at Ishwaripur.

The Portuguese slave-dealers and Mugs led by their devastations to the depopulation of the Sundarban. Cyclones also did their work; one swept over Saugor Island, in 1680, which carried away more than 60,000 people. The Mugs, as late as 1824, were objects of terror even to Calcutta, and in 1760, the Government had a *band* thrown across the river, near the site of the Botanical Gardens, to prevent them and the Portuguese Pirates coming up.

The Asiatic Society ought to petition Government to send an exploring expedition to the Sundarban.—

Mr. Blochmann said—

"I think the deserted state of the Sundarban is due to the incursions of the Portuguese and the Mugs rather than to cyclones.

The first cyclone known to me is mentioned by Abulfazl in the third book of the *Ain*, where he says—'The Sarkár, or district, of Baglá, extends along the seacoast. The fort of the Sarkár is surrounded by a forest. From new moon to full moon, the waves of the sea rise higher and higher; from the fifteenth to the last day of the moon, they gradually decrease. In the 29th year of the present era (A. D. 1585), one afternoon, an immense wave set the whole district under water. The chief of the place was at a feast; he managed to get hold of a boat, whilst his son Paramánand, with a few others, climbed up a

Hindu temple. Some merchants got on a *Tálár*.* For nearly five hours the waves remained agitated; the lightning and the wind were terrible; houses and ships were destroyed; only the Hindu temple and the *Tálár* escaped. About two hundred thousand souls perished in this hurricane.

Abulfazl does not mention the northern boundary of the district of Baglá; but it cannot have come up as high as Calcutta, because Calcutta, or the *Mahall of Kalkattá*, as it is spelt in the *Áin*—very likely 'the oldest book in which our Capital is mentioned—belonged, at Akbar's time, to the Sarkár of Sâtganw, near which the Portuguese had founded the town of Húglí (Hooghly), which name also occurs in the *Áin*.†

Now the Cyclone of 1585 could not have been the cause of the devastations in the Sundarban, because Abulfazl, eleven years later, in 1596, mentions four towns as belonging to the Sarkár of Baglá, viz., Ismá'íl-púr, commonly called Bagláchín†; Srírámpúr; Sháh-zádah-púr; 'Ádilpúr. These four places must have been of some importance, because the district then paid a revenue of nearly seventy lakhs of *dáms*, i. e., nearly 180,000 Rs., and was besides liable to furnish 320 elephants, and 15,000 zamindári troops. It would be of interest to know whether the Portuguese maps, alluded to by Mr. Long, or some old East India Office Records, mention these four towns. *De Barros*' Map, and *Rennel's* Map of 1772, contain nothing; and we may at present assume that the ruins of towns discovered in the Sundarban, belong to some of the four towns. It is noticeable that three out of the four towns have Muhammadan names.

There is a difficulty connected with the name of *Baglá*. The Manuscripts of the *Áin* which are in my hands, give a *B* as the first letter of the name. But the author of the *Siyar i Mutaakkhharin*, who copies the above record of the cyclone from the *Áin*, has *Húglá* (هوكلا), instead of *Baglá* (بگلا), and distinctly asserts that the

* A wooden house built on 4 pillars, often erected near palaces and temples. The musicians used to play on it.

† I mention this, because Stewart, in his History of Bengal, lays an undue stress on the fact that the name of Húglí does not occur in Faria de Souza's History of the Portuguese in India (1695). The name occurs in the *Áin* (1596), and several times in the *Pádisháhnámah*; vide ed. Bibl. Indica I, p. 433, where the capture of Húglí by the Moguls, on the 12th June 1632, is described.

† The last syllable of this name is somewhat doubtful. Several MSS. have only *Baglá*.

coast of Lower Bengal was thus called from *higlá*, a weed used for thatching houses. But he wrote two hundred years after Abulfazl, in 1780.

The second great cyclone occurred, according to Mr. Long, in 1680. The third hurricane, known to me, took place in 1737, during which, according to the Gentleman's Magazine of that year, the English settlement of *Golgota* [Calcutta] severely suffered.

But in 1737 the Sundarban was deserted.

That the eastern part, at least, of the Sundarban was chiefly devastated by the Mugs, is also asserted on Rennel's Map of Lower Bengal of the year 1772, where the words "Depopulated by the Mugs" are written over the tract between Long. 90° and 91° , south of Bágirganj (Backergunje).^{*} The name of *Fringy Cally* (Long. $89^{\circ} 25'$) which on his map is given to one of the numerous branches of the Ganges, clearly belongs the 'remains' of the Portuguese."—

Babu Protap Chunder Ghose, Assistant Secretary, then read the following note :—

"As I have the supervision of the printing of a Historic Romance in Bengali, which gives an account of Pratápáditya's dealings with the Portuguese adventurers, I had occasion to look up some books, in order to authenticate certain facts therein referred to. In my search for them, I had to investigate the history of the Sundarban. The few notes I have taken down in connection with the subject, I will read out to you.

The earliest mention of that portion of Lower Bengal which is now known as the Sundarban, is in the *Ramáyana*. It is in connection with a legend relating to the origin of the river Ganges. How the numerous sons of Sagara, one of the many universal monarchs of ancient India, were reduced to so many handfuls of ashes by Kapilá's malediction, is known to every reader of the *Ramáyana*. How Bhagiratha, a mere boy of fifteen, by his devotion and prayer, pleased the goddess Gangá to come down to earth, and how Gangá divided herself into a hundred branches, before she entered the sea, is likewise known. I may mention that the Sanscrit name for *sea* is connected with the name of the universal king Sagara.

^{*} Vide also Col. Gastrell's Geographical and Statistical Report of the Districts of Jessore, Fureedpore and Backergunje, Calcutta 1868, p. 25.

No mention is made of any other events having happened on the sea coast of Lower Bengal. Names of no ancient cities, except Baiçala (Arrakan) said to have been situated there, are mentioned in the Mahábhárata or the later Puránas. Modern Sanscrit literature is peculiarly deficient, both in geographical accuracy and historical authenticity. For authentic history we must look to the works of foreign travellers.

In Arian's account of India, this portion of Bengal is mentioned in connection with the river Ganges. He gives the names of its several branches, and mentions two cities, which he says are situated in its Delta. It is difficult to identify them now.

Megasthenes who preceded Arian in his description of the Indians, speaks very obscurely of the Ganges. In Arian's list of the tributaries of the Ganges, we recognise the *Sona* in Soamus. Herodotus' account of India is very general and limited to the North Western Provinces. All invasions of any consequence were from the west and north-west of India. So late as Manu, the lawgiver, the Ganges was considered the eastern limit of the country habitable for the Aryas. In the war of the Mahábhárata, the king of Bengal is several times mentioned, apparently to strengthen the retinue of the principal warriors. We pass over some centuries without finding any notice of the country.

During the time of the Arab invasion of India (8th century of the Christian era), Sulaiman came to this country. An account of his travels is given in the Bulletin of the Geographical Society of Paris (p. 208). His account of the Delta of the Ganges is very meagre. All we can gather from him is that this part of Bengal was then in a flourishing condition. There existed then many cities which traded with Arrakan. The Persian Historians of the Muhammadan rule in India are generally silent about Bengal, most of them being more or less connected with the court of Delhi. They have directed little or no attention to the history of the secluded portions of the Emperor's dominions in the East, which were always governed by one or more, generally insubordinate, Viceroys. The little that was written by the natives, was either neglected or suppressed by the court followers. Ibn Batuta passed down the Delta of the Ganges, but he has recorded nothing regarding the Sundarban. He generally speaks of the

country as in a flourishing condition. In the 15th century, Nicoli Conti sailed up the Ganges and passed by a city named *Cernove*, which was on the river. This city, he mentions, was then in a flourishing state. He stayed for some time at Buffetania (Burdowan?). He visited Racha, a city on the banks of a river of the same name. On his way to the city, he crossed the Delta, where he found many good cities. Racha is evidently a misspelling of the Persian name *Rakhá-nak* (Arrakan).

Up to this time, we see, the jungles of the Sundarban did not exist. The earlier Portuguese writers unanimously assert that the Delta of the Ganges was much populated. Several cities are marked in De Barro's *Da Asia*, and two mighty rivers, flowing on the west by Satigam, (Saptagram, Sâtágánw), and on the east near the city of Chatigam, (Chittagong), bounded the fertile Delta of the Ganges. In his map, he distinctly lays down three cities as situated within a few miles of the sea.

Manuel de Faria de Souza in his "Portuguese Asia" says—"The Ganges falls into the sea between the cities of Arigola and Pisalta in about latitude 22°". At another place he says, "The Ganges enters the bay about the Lat. 23°, between Chatigam and Satigam, 100 leagues distant." He describes the intervening country as much populated and in a flourishing state.

Dr. Fryer (1674), speaking of deserts in his 'Special Chorography and History of East India,' says: "Here are sandy deserts near the gulph of Combaya (Cambay), and beyond Bengala towards Botan and Cochin China, whence they fetch musk."

It is very difficult to state who first applied the name Sundarban to the jungle in the Delta. No early writer uses the name. The name literally means "the good forest;" but as some write it *Sunderband*, it means the good embankment." Some are of opinion that the plant *sundri* (*Heriteira littoralis*), which grows in great abundance in the Delta of the Ganges, has given the name of the forest. This appears probable, as a whole district is named Hogla from the occurrence of a reed (*Typha elephantina*) of the same name. I would propose another etymology. There lived in this part of Bengal a semi-barbarous tribe named *Chandabhandas*, very similar to the Malangi (salt manufacturers) of the

present day. Their condition was a little better than that of slaves. In a copper plate inscription found in lot No. 55 of Mr. Hodge's Map, near Backergunj, Madhava Sena, evidently a brother to Kesava Sena of the Senarajas of Bengal, made a grant of some villages, Bágule (Bogla, according to Persian writers) &c., to a Brahman. With the villages, the king conferred on the recipient the right of punishing and employing the *Chandabhandas*, a tribe that inhabited the place. This tribe, I believe, gave the name to the uncultivated portion of the Delta, which they then occupied.

It is generally supposed that Portuguese piracy and Mug incursions in the 16th century devastated the whole country. Bernier (1655) speaking of Portuguese oppression, says—"They made women slaves, great and small, with strange cruelty, and burnt all they could not carry away. And hence it is that there are seen in the mouths of the Ganges so many fine cities quite deserted."

The remains of these fine cities are found in lots Nos. 116, 211, 165, and 146. Mr. Swinhoe has published a figure of the ruins lately discovered in lot 116. The temple is of the Buddhist type of architecture. In lot No. 146, there are brick ruins with terracotta ornaments. Most of the remains are on the banks of the Cobartak. Colonel Gastrell, in his "Geographical and Statistical Report of the Districts of Jessore Furreedpore and Backergunge," speaking of old ruins, states—"But all inquiry failed; nothing could be found save the ruins already mentioned on the banks of the Cobartak river. The mud-forts entered on Rennell's Map on the banks of the Rabanabad or Goolaceepa river do not exist now-a-days."

To the oppression of the Portuguese pirates we must not wholly attribute the desolation of the Sundarban. It may only be true regarding the eastern portion. We know from history that several partial deluges occurred in Bengal. Two are recorded in *Siyar-ul-Mutakhkharin* in connection with Sirkar Hogla. The first and more furious of the two, happened in the 29th year of the reign of Akbur (1585). Two hundred thousand of the inhabitants are said to have been drowned. Another is said to have occurred in the reign of Muhammad Shah (1737).

Such occasional deluges, accompanied by cyclones, by breaking up the embankments, may have destroyed some parts of Lower Bengal; the incursions of the Mugs may have done the same for

other parts. Portuguese pirates, Mugs, and occasional visitations of cyclones have acted together, to ruin the seacoast of Lower Bengal. The change, usually observed near the mouths of large rivers, must have likewise had a share in the general destruction.

With reference to the last cause of the desolation of the Delta of the Ganges, I would refer to what Mr. Ferguson says in the Quarterly Journal of the Geographical Society for 1863. But Sir Charles Lyell says, "Mr. J. Ferguson, in his paper on the Delta of the Ganges, differing from all writers of authority who preceded him, has argued that the sediment is thrown down in consequence of the overflowing river being checked by meeting with the still water of the jheels or lakes. In point of fact, however, the deposition of the coarser matter takes place immediately on the highest part of the banks where the water first begins to overflow, and before they reach those lakes which occur at a lower level in the alluvial plain on each side of the main river. The banks are of equal height and as continuous where no jheels exist."

Mr. Rainey, referring to the only historical anecdote connected with the Sundarban, mentions Rájá Pratápáditya. His authority is a Bengali work published under the superintendence the Vernacular Literary Society. The work is named "The Life of Pratapaditya." The author Pandita Haris Chundra distinctly states that his history is but an abstract, in modern Bengali, of a more elaborate work published by Ram Ram Bose for the College of Fort William. Ram Ram Bose in his work states that he describes the history of Pratápáditya as he has heard it told by old members of his family. For a more authentic history of the Rájá, particularly of his connection with the Emperor of Delhi, we must look to another work. The Muhammadan Historians do not even mention the Rájá by name. The Siyar ul-Mutakhkharín, however, mentions one as Pratáparudra, which is evidently a misspelling of Pratápáditya. This prince was defeated in a battle by Rájá Mán Sing. The only written history of Pratápáditya is in the Khitiça Charita, a Sanscrit History of the kings of Krishnagar. There the author incidently mentions Pratápáditya as being taken prisoner by Mán Sing in the beginning of the reign of Emperor Jehángir, and carried off in an iron cage. On his way to Delhi, the Rájá died at Benares. The

Bengali romance, of which I made mention, describes the intrigues of the Rájá with one Sebastian Gonzales, a Portuguese pirate, who in concert with Anupráma, a brother to the king of Arrakan, whose sister he had married, waged war against the king of Vaicala. Sebastian Gonzales is described, in De Souza's History, as a Portuguese sailor, who left his employment and established himself in Sundeep.

Bharatachandra, author of the Vidyá Sundara, has evidently taken his history from the Sanscrit work, as the very epithets of Pratápáditya, used in the Sanscrit work, are repeated in the poem. Pratápáditya was a powerful prince. The Sanscrit work states, there were twelve other kings of Bengal, all of whom were defeated by Pratápáditya, and he became the sole monarch of the Province.

He had an army of 52,000 swordsmen, 16 chains of elephants, and ten thousand mounted soldiers. He disclaimed all allegiance to the Emperor of Delhi.

Near the old city of Jessore, there are still to be found ruins of the palace and fort of Pratápáditya.

The Secretary then read Major Tennant's paper:—

On the Results deducible from the Observations made by Order of the Secretary of State for India at Guntoor on the late Total Eclipse of the Sun. By Major J. F. TENANT, R. E., F. R. A. S., F. M. S., Superintendent of the Observations.

As the Asiatic Society did me the honor of printing a pamphlet calling attention to this Eclipse and explaining the objects of research, I hope that some account of the results to which I have been led, may be interesting; and I feel that such an account is due.

Before proceeding further, I may say that, for the present, I accept as a true theory of the Sun that it is an ignited nucleus, solid or fluid, surrounded by an atmosphere containing as vapours many substances, which we only know as solids. In such an atmosphere, subject doubtless to enormous disturbances, the ordinary laws of equilibrium must hold. The densest vapours must lie lowest, and they will moreover be hottest. Any substances which can only exist in a state of vapour at a temperature of incandescence, must lie low, in the densest

part; for the outer portions of the Solar atmosphere must approximate rapidly to the temperature of space.

I have on one of my Photographs what I consider to be the image of this densest portion of the Solar atmosphere as an intensely luminous stratum, rather more than 7,000 miles thick. From this I conceive that the protuberances are formed.

One of those seen on this occasion is remarkable for its enormous height and its singular structure. It has been examined with Spectroscope and Polariscopes, and we have six Photographs of it exhibiting its marvellous structure. These have enabled me to form a theory of its construction as follows. From some cause, two violent jets of gas issued from points on the Sun's limb 20,000 miles apart, the more northern and larger of these was nearly perpendicular to the surface, the southern was inclined at about 40° to that surface: rushing through the luminous stratum, they carried off with them its lighter constituents, and meeting about 16,000 miles above the Solar surface, they joined. But the axes of these jets were not in the same plane: hence arose a rotatory motion in the whole, and gas and vapour, whirling in a vortex, rose to a height of 90,000 miles above the surface of the Sun. That gas was Hydrogen. If other gases were there, the traces were faint, and escaped my notice. The vapours of which I saw traces, were Sodium and Magnesium, the two lightest. Where I examined this horn in the upper part, I think I may safely say, Iron was absent; and if the gas had taken any of these with it, it had dropped them as it rose.

But this was a singular and exceptional phenomenon. Such violent outbursts seem uncommon even in the Sun, and, of course, the formation of a rotating column such as this, would be less so. Jets of gas ordinarily carry up with them portions of incandescent vapour forming with them columnar protuberances, and when, as would seem most common, the escape is still more gradual, bubbles of gigantic size are formed in the luminous stratum which are the ordinary rounded prominences. These are but of short duration. If an air-bubble on water be proverbially short-lived, how short would be the duration of a bubble merely covered with vapor, were that not prevented from subsiding by the constant fresh supplies of gas from below. Really broken in many places, the remaining clouds of vapour would

be kept up by the escaping gas, much as a pith ball by a jet of water, till at last they would settle down in small irregularly broken portions, much in the same way as a flocculent precipitate.

This hypothesis will, I think, explain the existence and phenomena of the protuberances. Where the gas (generally I should imagine Hydrogen) comes from, is not the point. I believe it perfectly certain that it is somehow disengaged from the very solar surface or near it; for it was present in the Great Horn. From what I have heard of the spectral examinations by others, they too saw in every spectrum its mark, though it was not identified (of course I am speaking of hand spectroscopes). I think, therefore, I may safely assume its general presence from the usual colour of the prominences.—

The President then asked Dr. Stoliczka to read his note on *The Total Eclipse of the 18th August, 1868, as observed by the Austrian Expedition at Aden.*

Dr. Stoliczka said that he had received several reports on the above subject from the members of the Austrian expedition, but as the main features of that remarkable phenomenon have been repeatedly described, he would only draw the attention of the Meeting to a few observations of more general interest. This would add a little to the varied information already published in our Proceedings. The Austrian Government, upon a recommendation of the Academy of Science, sent three officers to Aden, Dr. E. Weiss, Lieut. Riha and Dr. Ph. Oppolzer. Aided by the most valuable and very kind assistance of General Russel, and several other English officers at Aden, the members of the expedition completed all their arrangements in due time.

The weather at Aden on several days before the eclipse was rather unfavourable and not very promising. The mornings were cloudy as were also the evenings, while during the middle of the day the heat was very great. On the morning of the 18th August, the clouds round the sun dispersed only a few minutes before the first contact of the moon's shadow with the sun took place.

The work of the observation was divided in the following manner. Dr. Weiss undertook to observe (with a refractor of 6 inches) the corona and the position of the protuberances; Lieut. Riha conducted the spectral observations; and Dr. Oppolzer the luminar changes in the protuberances, especially at their contact with the corona. In all

these points important results have been obtained. Besides the bright red corona, there were only three protuberances visible, the length and positions of which have been accurately measured. Of special beauty and interest was one of the protuberances, distinguished by a great length—(about 2 minutes, = $\frac{1}{3}$ th of the solar diameter). Its color was an intense carmine red, and it remained visible not only during the whole of the eclipse, but even one minute after it, when it was obscured by clouds. On places where the edge of the disc of the moon just covered the sun, appeared a beautiful red margin, being separated from the sun by a narrow bright zone. The corona exhibited in the appearance and arrangement of the various rays some similarity to that observed on the 18th July, 1860, in Spain.

The spectrum was not actually reversed during the eclipse, although the dark lines perfectly disappeared, thus producing a faded, so called continuous spectrum. A few seconds before the termination of the totality, the color of the greatest refraction nearly entirely vanished, while the bright red, the red and orange colors were quite sharp, the yellow less distinct, and the green hardly perceptible. The red tints remained visible with perfect distinctness and intensity; they did not pass into each other, being separated by clearly traceable dark lines. To measure the width of each of the colored zones was impossible; as the whole phenomenon only lasted from three to five seconds. The duration of the eclipse was according to actual observation 2 minutes, 55 seconds, considerably shorter than in S. India, or on the eastern coast of the Bengal Bay.

The Austrian officers, during their stay at Aden, made numerous other astronomical and meteorological observations, which will be published in a special report of the expedition. Two meteoroscopes were of great service, and by means of them the direction of the course of about 200 meteors was determined.

I may add that the photographers of the Prussian expedition who remained at Aden, took with great success several views during the eclipse.

The President then requested Mr. W. T. Blanford, to favour the Meeting with his

Notes on a Journey in Northern Abyssinia.

At previous meetings of the Society, letters from me have been read, giving a brief general account of my movements in Abyssinia,

until the return of the army to Zoulla to June. Subsequently to the departure of the troops, I made another journey in Northern Abyssinia, of which I will now offer a few notes.

When accompanying the army I had had a fair opportunity of collecting the fauna of the highlands of Abyssinia (7,000—8,000 feet) and also of the low country near the Red Sea. But I had observed that a very interesting intermediate fauna occurs at about 3,000 to 6,000 feet of elevation, and many forms, rare on the highlands, are here abundantly represented. I therefore was glad to avail myself of an opportunity for examining a tract of country of this intermediate height. On my return to Zoulla in June, I learned that Mr. Munzinger, the Consul at Massowa, intended to visit the Anseba valley and the Bogos country, and an officer of the army whom I knew had arranged to accompany him. Mr. Jesse, the Zoologist, and I joined the party, which thus amounted to four.

The great mass of the Abyssinian highlands, of an average elevation of 7,000 to 8,000 feet, terminates a little north of the parallel of Zoulla, and opposite to Massowa, in the plateau of Hamazen. From the northern side of this plateau two considerable streams arise, the Anseba and the Barka, which, after a course of some length, unite and fall into the Red Sea south of Suakin. Both are dry except in the rains; during the wet season, however, they are frequently impassable. The country drained by them is of a general level of 3,000 to 5,000 feet, with many hills rising 6,000 and 7,000, and a few small plateaus, such as that of Marea, of the same height as the highlands to the south (7,000—8,000 feet). These countries are inhabited by tribes of Bedawin, formerly all Christian, but of late years largely converted to Mahomedanism. Amongst the tribes which are still Christian, some of the most important inhabit the upper Anseba valley, and of these the Bogos is one of the largest and wealthiest.

Our party left Zoulla on the 18th June, in a steamer for Massowa: only a few hours distance by steam. At Massowa we were detained for 4 days making arrangements for our journey, obtaining transport, &c., and we left on the 22nd, delighted to escape from the heat, which was almost insupportable. For our carriage we used some of the camels left behind by the army in Mr. Munzinger's charge, engaging a wild looking crew of drivers from the Habab tribes, who,

however, behaved very well, and carrying with us all provisions except meat, which we expected to obtain from the inhabitants or by our guns. We were accompanied throughout by a brother of the Naib of Arkeko, one of the principal chiefs of the country.

We marched first due west about 30 miles to Ailat at the foot of the main range of hills, intending to wait there for Mr. Munzinger, who was detained in Massowa. The road lay through low hills, mostly of a peculiar formation composed of interstratifications of volcanic and sedimentary rocks. About 20 miles from Massowa, we entered metamorphics, the newer volcanic beds being confined to the neighbourhood of the coast, along which they appear to form a fringe.

Ailat is the place where Mr. Rassam and his party remained for a long time, whilst awaiting an answer from Theodore to their application for permission to enter Abyssinia. The village is in a plain which here extends for many miles along the foot of the hills. As this was about three miles from water, we pitched our camp close to the latter, a proceeding we had subsequently occasion to regret. The water is supplied by a very hot spring, the temperature of which was unable to take accurately, one of my thermometers not ranging sufficiently high, while the boiling point thermometer was not graduated low enough; the temperature is, I believe, 150° or 160°, much hotter than other springs which issue along the foot of the hills, though all have a high temperature.

At Ailat lions and leopards abounded. Of the former, one came one evening within 200 yards of our tents, but we could not succeed in shooting it. A cow tied up as a bait was entirely devoured by hyænas (*H. crocuta*), which were as numerous here as everywhere else in Abyssinia. The spotted hyæna, though smaller in size, is far bolder than his striped relative (*H. striata*). I have never heard of even a young bullock or cow being killed by the latter in India, although I have known hundreds of instances of young buffaloes or bullocks being tied up as baits for tigers and panthers.

I obtained several birds at Ailat which I had not previously met with, the most interesting being *Micronisus niger*, *M. gabar*, *Centropus superciliosus*, *Lamprotornis rufiventris*, *Quelea sanguinirostris*, *Halcyon rufiventer*, *Promerops senegalensis*, *Dryoscopus cubla*,

&c. I also obtained a fine wild pig (*Phacochoerus Eliasi*), of which the skull has been preserved. Bustards (*Otis Arabs*) Beni Israel (*Antelope Cephalophus Hemprichii*) and guinea fowl (*Numida ptilyrhyncha*) abounded.

We remained at Ailat until the 30th June, when we were induced to leave in consequence of a very sad accident, an Abyssinian servant of Mr. Jesse's being killed in the night by a leopard in our camp. This was done so quietly that our first intimation was an outcry from the man nearest to the one killed, who was awakened by the animal dragging the body past him. The unfortunate Abyssinian was quite dead with two or three tooth marks in his throat. The wild animals are probably the reason why, in this country, all villages and all encampments are placed at a considerable distance from water, and we invariably afterwards had fires kept burning all night, a most important precaution.

This circumstance of course alarmed all our men, and, as all our search after the beast proved fruitless, we determined to move at once. We accordingly went northwards along the base of the hills to Asus, and thence to Kusaret, a little way within the ranges, intending to go on to Tunfa, a place said to be 2,000 feet or rather more above the sea, with a pleasant climate.

But at Asus we heard from Mr. Munzinger that he would still be detained for some time in Massowa, and that we had better go on by ourselves to Keren in Bogos via Ain and the Lebka valley, as the direct route via Kusaret is impracticable for camels. As we were all more or less tired of the heat, and Mr. Jesse was for two or three days very ill from exposure to the sun, we determined on pushing at once for the higher country. We accordingly marched to Kanzal 20 miles, and thence made a long march of 30 miles at night across the desert of Shob to Ain where the Lebka stream emerges from the hills: no water occurring between the two places, the march could not be divided. We had not long left Kanzal, when we came to an encampment of the Warea tribe, pitched as usual about 3 miles from water. The encampment was surrounded by a circular low thorn fence, inside which were small hemispherical huts of mats with a framework of sticks. These were arranged in a circle just inside the fence. In the central space, where the goats and cattle were herded at night, stood

two or three isolated huts, one of which was said to be used for marriages and another for the sick. The people resembled Shohos, having bushy frizzled hair with long curls, but besides the spear, the universal weapon of Abyssinia, and indeed of almost the whole of Africa, the chiefs wore straight swords of European manufacture, and not curved scimitars like those of the Shohos and Danakils.

The head sheikh, a most truculent looking old ruffian, but very civil nevertheless, went on with us for some distance, and we commenced our night march across the desert. It was a bright moonlight night and we met with large herds of *Gazella sammerringii*. We rested for a few hours after midnight and, starting again at daybreak, reached Ain about 8 o'clock.

There we halted for a day and then marched up the Lebka valley. The road, like the path from Koomeylee to Senaïé, and all the passes leading to the Ethiopian highlands, is the bed of a torrent, and the ascent in the Lebka is even more gradual than from Koomeylee. In a march of 20 miles we only ascended about 1,000 feet, and the greater portion of this ascent appeared to be at a few narrow rocky gorges. The hills at the sides of the pass are very barren, and the scenery nowhere so grand as in the magnificent gorge of Sooroo between Koomeylee and Senaïé. Two marches of about 20 to 25 miles each, led us up this valley, the first to Mohabar, the second past Kelamet, a small village of the Az Temeriam tribe, to Kokai. Here we almost suddenly—certainly within a distance of 5 or 6 miles—passed from a perfectly desert region into hills covered with grass and green bushes, and rich valleys with fine trees, amongst which *Adansonia* and the Kolqual, that magnificent *Euphorbiaceous* plant which forms so conspicuous an element in Abyssinian scenery, were abundant. This change took place at about 3,500 feet, Kokai being about 4,000. We had passed suddenly into the region of the Abyssinian rains.

At Kokai we found a large encampment of the Az Temeriam with an immense herd of camels. These people and all others of the Habab and Shoho tribes, live a curious nomade life. During the cold weather, from November till April or May, they inhabit the lowlands near the Red Sea, which, at that time, in consequence of the winter rain, afford pasturage for their animals. When grass and water fail in Samhar, as the tract along the sea is called, these people

move with their camels, cattle, sheep, goats and mules to the highlands and remain there from June till November. They are thus during different parts of the year subject to different nationalities; they pay tribute to the Turks for their occupancy of the lowlands, and to the Abyssinians for the pasturage in the highlands. They are all Mahommedans.

We had seen a few tracks of wild elephants on our road up the valley. They migrate like the people, descending to the lowlands when the latter are green with the winter's rain, and ascending to the highlands in June and July. We heard that some were in the neighbourhood of Kokai, and the morning after our arrival, the villagers brought us information of a small herd near our encampment. They were in fact only about a mile distant, and, singularly enough, in the middle of the camels which were feeding in all directions in the jungle. They were in a most extraordinary place for wild elephants. Not only were there the camels, but the men with the camels had been in the immediate neighbourhood the whole morning, shouting and making a noise that no Indian wild elephant in the daytime would have remained within miles of. When the elephants were first pointed out to us, a camel was quietly browsing within 20 yards of one of them, neither elephant nor camel taking any notice of each other.

There were 5 elephants; one old female and 4 males of various sizes, the largest nearly the size of the female, the others smaller, the youngest not above 3 feet high. We succeeded in killing all, the little one being shot by some mistake. They shewed no disposition to fight, and we were rather ashamed of killing such quietly disposed animals. The next herd met by one of our party were of a very different temper, and he had to run for his life from them, and Mr. Jesse, one day when collecting little birds with only dust shot in his gun, was charged without provocation by an immense female.

It was evident that the whole herd was a family, the mother and her 4 young ones of various ages, and it is probable that in this respect the African elephants resemble those of Ceylon as described in Sir E. Tennant's work. I secured the skull of the largest elephant. All had very small tusks, as indeed, have all the elephants of this portion of Abyssinia; so that nearly tuskless races occur amongst the African as well as the Asiatic elephants. We tried elephant's

trunk and foot, baking them in a hole in which a big fire had been made, after the most approved African recipe. The trunk was pronounced excellent though rather hard; as to the foot we were none of us inclined to endorse Sir Samuel Baker's high approval of it. The whole of the elephant's flesh, indeed, I may say everything from the carcass soft enough to be eaten, was carried off for food by the natives. The skin they also took to make into shields. Mr. Jesse and I remained at Kokai some days: the fauna was very rich and interesting. Amongst the birds were a parrot, *Psephenus* *Meyeri*, and 3 kinds of Rollers—*Coracias Abyssinica*, like the Indian bird in plumage, but with elongated tail feathers; *O. Levallantii* which is more nearly allied to the European roller; and *Eurystomus afer* which I had not previously met with. I also obtained here a species of *Oxylophus*, (probably *O. afer*), *Chizaerhis zonura* and many other species.

On the 13th July, we marched from Kokai to Bedjuk in the Anseba valley. The road lay over a low pass, Mas'halit, about 4,800 feet above the sea, separating the feeders of the Lebka from the Anseba valley. Bedjuk, the principal village of the tribe of that name, was by far the largest place we had seen since leaving Massowa. Here also we came upon the first cultivation we had met with. The Habab tribes cultivate small tracts of land in Samhar and other parts of the lowlands after the winter rains, but they possess no land in the highlands. The cultivation around Bedjuk consisted entirely of jawari or millet (*Holcus*), apparently the only grain grown at this season in this part of the country.

The Anseba valley near Bedjuk is an undulating tract 8 or 10 miles broad, but becoming narrow above and below. Except a considerable area of cultivated ground near Bedjuk and smaller tracts near some other villages, all is covered with thin bush jungle, except in the ravines, which contain thick scrub. On the bank of the river there is a belt of high trees with dense underwood, so thick in many places that it is difficult to creep through it except by following the narrow paths made by elephants and rhinoceroses. There was a considerable quantity of water in the river, and frequently it was so much flooded as to be impassable.

With the exception of one visit to Keren, the principal village of

the Bogos tribe, I remained on the Anseba from the 13th July till the 8th August, collecting; and I obtained a very fine series of specimens. The principal Mammals inhabiting the valley were 2 monkeys, *Cynocephalus Hamadryas* and *Cercopithecus griseoviridis*, lions, hyenas, jackals (*Canis mesomelas* a very handsome species) rhinoceroses (*R. Keitloa*), elephants, *Phacochærus*, *Hyrax* (much less common than in Abyssinia proper), *Xerus leuco-umbrinus*, *Sciurus annulatus*, hares (*Lepus Habessinicus*) Koodoo, Klipspringer and Beni Israel. The lions were numerous and very noisy, constantly roaring round our tents at night; but we only once saw one and never succeeded in getting a shot at any. The rhinoceroses kept to the neighbourhood of the river, their principal abode being in the dense thickets on the bank, and their presence rendered walking through these thickets rather dangerous. During our stay we killed two; the skeleton of one has been taken by Mr. Jesse to England, where it will doubtless be considered valuable, as no skull even of the species exists in London. Of the other, I have preserved the head (exhibited). This species, which is replaced at the Cape of Good Hope by *R. bicornis* appears to be the only black rhinoceros of Northern Africa. It is undoubtedly the same species so frequently mentioned by Sir Samuel Baker. The Koodoo (*Strepsiceros*) were in small herds in the open jungle away from the river bank, bucks being very much rarer than does. Klipspringers (*Oreotragus saltatrix*) occurred on the hills, but they never came down into the valley.

Of birds, the superb *Helotarsus ecaudatus*, one of the finest of the eagles, was far from scarce. Besides *Pæocephalus Meyeri*, another parrot or rather parroquet occurred, *Palæornis cubicularis*, which appears to be just distinguishable from the common Indian *P. torquatus*. Of woodpeckers, I obtained *Picus æthiopicus*, and of barbets *Pogonorrhynchus Saltii* (*Laimodon Brucei*, Rüpp.) *Barbatula chrysocomus* and *Trachyphonus margaritatus* which has a call singularly resembling that of the grey partridge of India. *Centropus superciliosus*, a species of *Chrysococcyx*, *Oxylophus afer* and a second species of *Oxylophus* which I cannot distinguish from the common Indian *O. melanoleucos*, and, in August, *Ouculus canorus* were the Cuckoos met with. Two species of *Indicator* occurred in the river thickets. *Oolius Senegalensis* and *O. leucotis*, *Turacus leucotis*, and *Chizacris zonura*

were far from rare, the last two on the river banks only. Of the Fissirostral Insectivores besides the 3 Rollers, the principal forms were 3 species of Kingfisher, all insectivorous, and all distinct from the 3 species which I obtained on the highlands, and 4 hornbills, of which *Tockus larvatus* was scarce. It and *Tmeteceros Abyssinicus* belong to the highland fauna while *Tockus erythrorhynchus* and *T. nasutus* are common to the Anseba valley and to the base of the hills. *T. flavirostris*, so common in the passes below Senafé, did not occur. 2 species of *Promerops*, *P. erythrorhynchus* and *P. cyanomelas*, *Nectarinia pulchella*, *N. affinis* and, very rarely, *N. cruentata*, *Dicrurus lugubris*, *Orateropus leucocephalus* and *C. leucopygius* (another instance of both highland and lowland forms occurring together) *Dryoscopus cubla*, *Telephorus aethiopicus*, *Oligura micrura*, *Parus leucomelas*, *Hyphantornis larvatus*, *H. personata*, *Estrela phœnicotis*, *Lagonisticta minima* and *Zonogastris citerior* were a few of the more conspicuous Insectivores. *Treron Abyssinica*, *Columba guinea* and one or two doves were common, *Francolinus Rüppelli*, *F. gutturalis*, *F. Erkelii* (rare here, common at higher levels) and *Numida ptilorhyncha* were the principal Rasores. Waders were scarce, *Ciconia Abdimii*, *Scopus umbretta*, *Lobivanellus senegalensis* being the most conspicuous, and I obtained a specimen of *Ædicnemus affinis*. Of water birds I only found *Chenalopex Aegyptiacus*, the Egyptian goose or sheldrake, which was breeding on trees along the river.

Of Reptiles I obtained *Emys (Pelomedusa) Gehaffiæ* and *Testudo (Cinixys) Bellianus*, *Varanus ocellatus* and two species of snakes.

Butterflies and beetles abounded, and I procured a small collection. Mollusca were singularly scarce.

The inhabitants of the valley consist partly of Christian tribes, Bedjuk, Belen, &c., partly of the Habab Mahommadans, both being perfectly friendly. There is none of the bigotry of the Abyssinian highlands: both Christianity and Mahommedanism are of a low type, and approximate so closely, that conversions from one to the other are constantly taking place. The people composing the tribes are of two classes, chiefs and commoners, of different origin, the former being later immigrants into the country. The latter own all the land, the wealth of the former consisting mainly of cattle. The men, from the age of about 18, let their hair grow into a frizzled mass or into ringlets,

other parts of Southern India, &c. I found many small flakes of obsidian scattered about, evidently chips struck off in the formation of stone implements. I had before found the same in many places in Abyssinia, near Zoulla and close to Magdala amongst others, but they were more remarkable here, as no volcanic rock from which they could have been derived exists in the neighbourhood.

We marched from Rairo into the Lebka, returned along the stream to Ain, and thence crossed the desert by the direct route to Massowa. I halted for 3 days at Amba, 30 miles N. W. of Massowa, in order to endeavour to obtain specimens of the *Oryx Beisa*. In this I was successful. The *Oryx* occur singly or in small herds and keep near the places where water is found, as they drink every day. They are very beautiful antelopes, as large as a wild ass and with very much the same colour, form and movement. I killed 4 altogether and have preserved 2 skins and a skeleton. Ostriches also occur in this part of the country but we saw none.

At Amba, the halting-place where I killed the *Oryx*, we met a party of Egyptian officers engaged in surveying a line for an electric telegraph from Massowa to Suakin. We finally returned to Massowa on the 23rd August. Mr. Jesse left by the Egyptian steamer for Suez. My remaining companion and myself, after being kept till the 29th, succeeded in chartering a small open boat to carry us to Aden. Luckily we had a fair wind as far as Perim and we reached Aden on the 3rd September.

* * * * *

After a few remarks made by the President on the great interest which attaches to this paper, the meeting broke up.

LIBRARY.

The following additions have been made to the Library since the last meeting.

* * The names of the Donors in capitals.

Presentations.

Abhandlungen der Königl. Akademie der Wissenschaften zu Berlin, 1866.—BY THE ACADEMY.

Philosophical Transactions of the Royal Society of London, Vol. 157, Part II.—BY THE ROYAL SOCIETY OF LONDON.

Bulletin de la Société de Géographie, Août, 1868.—THE GEOGRAPHICAL SOCIETY OF PARIS.

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The Fellows of the Royal Society, 30th November, 1867.—DITTO DITTO.

Indische Studien, Vol. X. Part III.—DR. A. WEBER.

The History of India. By Sir H. Elliott, Vol. I. Three copies.—THE GOVERNMENT OF INDIA, HOME DEPARTMENT.

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Adam's report on Vernacular Education in Bengal and Behar. By the Rev. J. Long.—THE GOVERNMENT OF INDIA, HOME DEPARTMENT.

Report of the Inspector-General of Dispensaries in the Panjab, 1867.—THE GOVERNMENT OF BENGAL.

Ditto on the Sanitary Administration of the Panjab, 1867.—THE GOVERNMENT OF BENGAL.

Records of the Geological Survey of India, Vol. I. Part III.—THE GOVERNMENT OF BENGAL.

Report on the Administration of the North Western Provinces, 1867-68.—THE GOVERNMENT, NORTH WESTERN PROVINCES.

Selections from the records of Government North West Provinces, Vol. I. No. II.—THE GOVERNMENT NORTH WESTERN PROVINCES.

Selections from Calcutta Gazette of the years 1798 to 1805. By W. S. Seton-Karr, Esq.—THE GOVERNMENT OF BENGAL.

it is not plaited as amongst the Abyssinians of Tigré and Amhara, though it is just as liberally plastered with butter or fat. Their weapons are straight swords, spears and shields.

Their houses are the same hemispherical mat huts as those mentioned before. Far more conspicuous, however, are their tombs, which are quite different from any others in Abyssinia, and consist of round heaps of stones, 20 feet or more in diameter, placed generally on the top of a rise, and covered at the top by fragments of quartz. These white tumuli are the most conspicuous objects in the Anseba valley. A few are not covered over with white stones; these we learned were the tombs of men who had been killed, but whose deaths had not been avenged, the law of blood for blood being strictly carried out. The *lex talionis* is of this nature. If a man has been killed by another, no matter how, whether the man killed was amusing himself by carrying off the other's cattle, whether he was killed accidentally or intentionally, is all the same; the murderer may offer to atone for the offence by paying the relatives of the dead man a certain fixed number of cows; the exact number depending upon whether the man killed was a chief or a commoner. I forget the exact number, but it is rigorously fixed. If this be accepted, it is well, but if not, or if, as is far more frequently the case, no atonement is offered, the relatives of the murdered man up to the 7th degree, are bound to kill in turn the murderer or one of his relatives also to the 7th degree, women and children, however, being excepted. These blood-feuds are generally between families in different tribes, occasionally, however, between families in the same tribe, but they frequently lead to petty wars, and some of the tribes have suffered greatly in consequence, for the feud frequently continues until one family or tribe has lost so many of its members, that there is no hope of avenging the deaths of all, then an arrangement is made and sealed by intermarriage. Many other of the customs of these people are very curious, such as that of submitting disputes to arbitration. There can be no question of their being of a totally different stock from the Abyssinians of the highlands, their features are quite of another cast, and their houses are as distinct as their manners and customs. They have been described by Mr. Munzinger in two works "*Sitten und Rechte der Bogos*" and "*Nord-ostafrikanische Skizzen*;" but the works seem to be but little known,

even in Europe. There are probably few tribes, however, who present more remarkable peculiarities.

Mr. Munzinger joined our party after we had been three or four days at Bedjuk, and remained with us for some days, finally returning with us to Massowa. From his great knowledge of the people, and the respect in which he is held by them, he has considerable influence, and during our stay he succeeded in postponing if not preventing an attack upon some of the Bogos people by the chief of Hamazen. With Mr. Munzinger I spent a day at Keren, the largest village in this part of the country, and in which some French Missionaries are resident. There were other Europeans also in the neighbourhood, amongst them the Count de Seve, one of the French Commissioners, who had accompanied the army in Abyssinia, and who was staying with an Italian, who has lived for some years near the Barka. Except the houses of the Mission and one or two others, all the huts at Keren are the usual mat domes, sometimes covered over with a grass roof. Keren lies about 16 miles S. W. of Bedjuk in an open plain at the base of a mass of hills composed of highly granitoid gneiss.

During our stay in the Anseba valley, we did not remain at Bedjuk, but marched down the valley as far as Maregas, halting at intermediate places. The weather was very pleasant, always fine in the morning, though it generally rained for an hour or two, sometimes longer, in the afternoon.

About the time we left, the rain was increasing, and we were unable to return down the Lebka. We had to make a detour to the north from Kelamet through Rairo, near Af Abed, where we found very large encampments of the Habab tribes, who had brought their flocks and herds from the north, where no rain had fallen, and pasturage was consequently deficient. Lions were numerous, having as usual followed the cattle. At our next camp on the Lebka, near Ain, 4 of them came within a quarter of a mile of our camp and one of them seized a camel. We succeeded in shooting this one which was a lioness, and the others ran off. The lions had only very short manes, as appears to be universally the case in Abyssinia.

At Rairo the whole country consists of highly granitoid gneiss weathering into the peculiar rounded masses so characteristic of the rock in India, as in parts of the Sonthal pergunnahs, in Mysore and

Purchase.

Revue Des Deux Mondes, 15th September, 1st October, 1868.

Comptes Rendus, Nos. 9, 10, 11, 1868.

Revue Archéologique, No. IX. 1868.

The Quarterly Journal of Science, No. XX. October, 1868.

Westminster Review, No. LXVII. October, 1868.

Revue de Zoologie, No. 9, 1868.

The American Journal of Science and Arts, No. 136, 1868.

The Annals and Magazine of Natural History, No. X. 1868.

Persian MSS. Purchased.

Sirájullughát, by Sirájuddín 'Alí Khán Ārzú.

'Atiyyah i Kubra, by Do.

Sharh i Zuhúrf.

Dalíl i Sáti.'

Exchange.

The Athenæum, for August and September, 1868.



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ADDITIONAL ERRATA.

Page 74, l. 6 from below, read *Geological*, for *Zoological*.

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## APPENDICES.

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APPENDIX A.  
*List of Communications received in 1868.*

| Authors.                               | Papers Communicated.                                                                                                   | Author's date.  | When received.   | Where printed.                             |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------|------------------|--------------------------------------------|
| Abdul Latif Khan Bahadur, Maulavi, ... | Notes on an Arabic history of the Panthays, ...                                                                        | 3rd June 1868.  | 3rd June 1868.   | Proc. June 1868.                           |
| Godwin-Austen, Capt. H. H. W.          | Notes to accompany a Geological Map of a portion of the Khasi Hills, near Long. 91° E., ...                            | October 1867.   | 28th Jan. 1868.  | Will appear in Journ. Pt. II. No. I. 1868. |
| Avdall, J. Esq. ...                    | Authors of Armenian Grammars, from the earliest stages of Armenian literature up to the present day, ...               | 30th July 1868. | 30th July 1868.  | Jour. P. I. No. II. 1868.                  |
| Ball, V. Esq. ...                      | Notes on the Kheriahs, an aboriginal race living in the hill tract of Mánbhūm, ...                                     | ...             | 1st July 1868.   | Proc. August 1868.                         |
| Ditto ditto, ...                       | Notes on the Flora of Mánbhūm, ...                                                                                     | ...             | 4th Nov. 1868.   | Proc. Nov. 1868.                           |
| Blanford, W. T. Esq. ...               | Contributions to Indian Malacology, No. IX., ...                                                                       | ...             | 12th Jan. 1868.  | Jour. P. II. No. II. 1868.                 |
| Ditto ditto, ...                       | Notes, on a tour Northern Abyssinia, Contributions to Persian Lexicography, ...                                        | 2nd Dec 1868.   | 2nd Dec. 1868.   | Proc. December, 1868.                      |
| Blochmann, H. Esq., M. A.              | Notes on the Poems of Prince A'zamuddin, grandson of Tipu Sultan, and on three other Persian Poets, styled Sultan, ... | ...             | 11th April 1868. | Jour. P. I. No. I. 1868.                   |
| Ditto ditto, ...                       | ...                                                                                                                    | 1st Sept. 1868. | 1st Sept. 1868.  | Proc. Sept. 1868.                          |

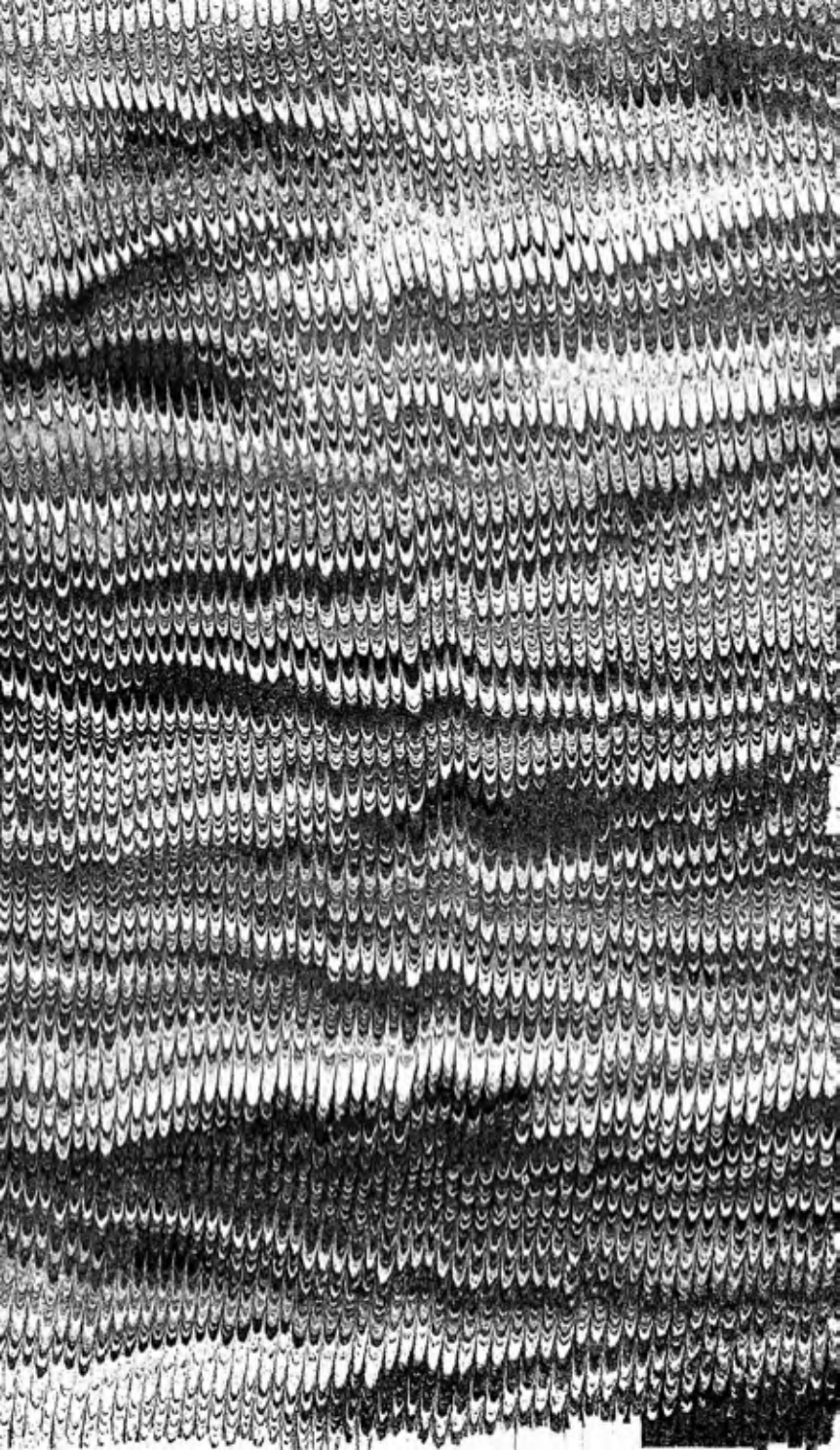
|                              |                                                                                                                    |                 |                 |                         |
|------------------------------|--------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|-------------------------|
| Carnegy, P. ...              | Queries on the races of India, ..                                                                                  | 4th Mar. 1868.  | 4th Mar. 1868.  | Proc. March 1868.       |
| Growse, F. S. Esq. C.E.      | The Poems of Chand, ..                                                                                             | ...             | 4th Oct. 1868.  | Jour. P.I.No. II. 1868. |
| Herschel, W. Esq. ...        | Descriptions of a Hindu Temple converted into a mosque at Gangeswar, Zillah Midnapore, ..                          | 7th Dec. 1866.  | 21st Dec. 1867. | Jour. Pl. No. I. 1868.  |
| Johnstone, Lieut. J. ...     | A memorandum on Elephants, ..                                                                                      | 12th Mar. 1868. | 16th Mar. 1868. | Proc. May 1868. [1868.  |
| King, Dr. G. ...             | On the birds of Goona Districts, ..                                                                                | 2nd Mar. 1868.  | 10th Mar. 1868. | Jour. P. II. No. IV.    |
| Ditto ditto, ...             | Notes on the Lion of Abou, ..                                                                                      | 30th May 1868.  | 9th June 1868.  | Proc. August 1868.      |
| Kurz, S. Esq. ...            | On Pandanophyllum and allied genera, ..                                                                            | ...             | 19th Oct. 1868. | ....                    |
| Ditto ditto, ...             | Remarks on the genus Pandanus, ..                                                                                  | ...             | Nov. 1868.      | ....                    |
| Maingay, Dr. A. C. ...       | Notes on rare and little known birds, ..                                                                           | ...             | 8th April 1868. | Proc. August 1868.      |
| Mitchell, R. Esq. ...        | Vrnikof M. M., statistical data on the area of Asiatic Russia, Trans-lation of, ..                                 | 2nd Mar. 1868.  | 10th Mar. 1868. | ....                    |
| Nevill, Messrs. G. & H. ...  | On some species of Gastropoda from the Southern Provinces of Ceylon, ..                                            | ...             | 5th Augt. 1868. | ....                    |
| Oldham, W. Esq. L.L.D.       | Memorandum on the action of the Ganges in the Benares Province, ..                                                 | ...             | 6th Oct. 1868.  | Proc. October 1868.     |
| Phayre, Col. Sir A. ...      | The History of Barma, ..                                                                                           | 18th June 1868. | 25th July 1868. | Jour. P.I.No. II. 1868. |
| Rajendralala Mitra, Babu ... | Notes on the inscriptions from Mathura, ..                                                                         | ...             | ....            | ....                    |
| Rainey, H. J. Esq. ...       | What was the Sundarban originally, and when and wherefore did it assume its existing state of utter desolation? .. | 23rd Nov. 1868. | 23rd Nov. 1868. | Proc. December 1868.    |

| Authors.          | Papers Communicated.                                                                                                                                                 | Author's date. | When received.  | Pl. & No. of the Journ.<br>and Proc.          |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------------|-----------------------------------------------|
| Stolozka, Dr. F.  | On the Anatomy of <i>Sagartia Schil-<br/>leriana</i> and <i>Membranipora Benga-<br/>lensis</i> , .. .. .                                                             | ....           | 3rd June 1868.  | Will appear in Journ.<br>Pt. II. No. I. 1868. |
| Ditto ditto,      | The Malacology of Lower Bengal,<br>No. 1, on the genus <i>Onchidium</i> , ..                                                                                         | ....           | ....            | ....                                          |
| Tennant, Major F. | On Solar Eclipses and the total<br>Eclipse, Augst. 18, 1868, ..                                                                                                      | 1st May 1868.  | 4th Nov. 1868.  | Printed separately.                           |
| Ditto ditto,      | On the results deducible from the<br>observations made by order of the<br>Secretary of State for India at<br>Guntoor, on the late total<br>Eclipse of the Sun, .. .. | ....           | 25th Nov. 1868. | Proceedings for Decem-<br>ber 1868.           |

## APPENDIX B.

*List of Donations.*

| Donors.                                                | Donations transferred to the Indian Museum.                                                                                                           |
|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ball, V. Esq. .. ..                                    | A specimen of <i>Ciconia alba</i> .                                                                                                                   |
| Gauricharana, Raya, Babu, ..                           | A specimen of <i>Strix Indica</i> .                                                                                                                   |
| Colvin, B. W. Magistrate of Mainpuri, .. ..            | A copper spearhead, two copper axes, a few copper bangles.                                                                                            |
| Gregory, Lieut. J. .. ..                               | A specimen of a <i>Teliphoenus</i> from the Naga Hills.                                                                                               |
| Harachandra Chaturdharina, Babu, .. ..                 | A stone slab bearing an Arabic inscription, found in his Zemindary Sherepore.                                                                         |
| Hemchandra Deva, Babu, .. ..                           | A nest of <i>Orthotomus longicaudus</i> .                                                                                                             |
| King, Dr. G. .. ..                                     | A skeleton of a lion.                                                                                                                                 |
| Maingay, Dr. A. C. .. ..                               | A collection of skins of rare and little known birds from Malacca.                                                                                    |
| Mangles, H. A. Esq. .. ..                              | A fragment of a stone hatchet.                                                                                                                        |
| The Rev. F. F. Mazuchelli, .. ..                       | An iron cage.                                                                                                                                         |
| Rakaludasa Haladara, Babu, .. ..                       | A quantity of Kaolin from Mán-bhúm.                                                                                                                   |
| Rutledge, W. Esq., .. ..                               | Two specimens of <i>Llama glama</i> .                                                                                                                 |
| Supt. Barrackpore, Park, The ..                        | A specimen of a young tiger.                                                                                                                          |
| " " .. ..                                              | A ditto of <i>Mellivora Ratel</i> (Badger).                                                                                                           |
| " " .. ..                                              | A ditto of <i>Pavo muticus</i> .                                                                                                                      |
| Supt. Govt. Mathematical Instrument Department, The .. | Two base-line chains, 100 feet each, a Zenith Sector, with stands, a ditto Micrometer, with ditto, formerly used by Col. Lambton in the G. T. Survey. |
| Smith, Dr. D. B. .. ..                                 | Twelve <i>Udia</i> skulls.                                                                                                                            |
| Ward, Capt. H. C. E. .. ..                             | Four specimens of <i>Physa Prinsepia</i> , from Sanka Sahada, in the Mundla district.                                                                 |



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